OUTING

FOR MARCH

PUBLIC LIBRARY
OF THE

EDITED BY CASPAR WHITNEY

WITHOUT FAULT

Apollo-like the **HAYNES** 1905 model comes forward, the type of the present day

PERFECTION

Just reflect that in the past it was considered a perfect car, but notwithstanding the ingenious inventor **HAYNES** has this year made it better. Our catalog will tell you how—Get it.

THE HAYNES-APPERSON CO.

New York Branch, 1715 Broadway

KOKOMO, IND. Member A. L. A. M.

Chicago Branch, 1420 Michigan Ave.

PRICES

$1,350

16-18 H. P. 2 cylinder (opposed), two passenger car, with folding seat in front. Three speeds forward and one reverse.

$1,500

16-18 H. P. 2 cylinder (opposed), convertible four passenger (surry type). Shaft drive. Three speeds forward and one reverse.

$3,000

35-40 H. P. 4 cylinder (vertical in front), silent roller gear, shaft drive (direct on high gear), five passenger, double side entrance tonneau, with extra storage space.

The race.

Drawing by Philip R. Goodwin.

OUTING

VOL. XLV MARCH, 1905 No. 6

THE LEONIDAS HUBBARD, JUN., EXPEDITION INTO LABRADOR

WITH PHOTOGRAPHS TAKEN BY MR. HUBBARD ON THE TRIP

By CASPAR WHITNEY

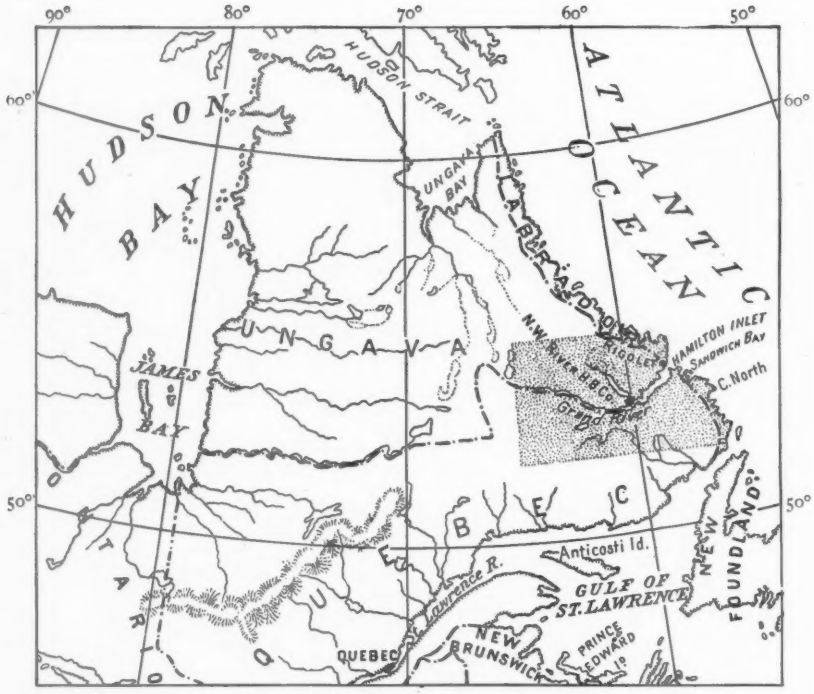
ON June 20, 1903, Leonidas Hubbard, Jun., the assistant editor of OUTING, closed his desk, and set out from New York for the purpose of meeting the Nascaupee Indians of Labrador somewhere on the George River at the time they gathered for the early autumn caribou migration. He planned to strike from the head of Grand Lake up the Nascaupee River, thence through that small unexplored, and, as it proved, incorrectly mapped, tract of Labrador lying between Grand Lake and Lake Michikamau. Through Lake Michikamau he was to go down the George River (which heads about twenty miles to the north of this lake) to the Indians, who rarely go out to the coast to trade. The return journey was to be over the same route to the south, or on to Ungava Bay on the north, or even out to St. James' Bay on the west, according to time and opportunity.

It was a trip with which I was frankly not in sympathy and from which I sought to dissuade Hubbard; not because of its severity, for, as exploring trips go, it seemed a fairly easy venture for experienced wilderness hunters or travelers, but rather because I considered it not worth the time and money. Not good enough, in a word. Because of our high regard for Hubbard, however, and a desire to, as much as we could, help him attain to his ambition, we gave him the financial aid he asked. His equipment, party and arrangements were not only entirely of his own choosing, but even unknown to us. In this respect Hubbard took neither OUTING nor its editor into his confidence.

Hubbard and party, consisting of his friend Dillon Wallace, a New York lawyer, and George Elson, a half-breed Cree Indian, sailed from New York to St. John's, Newfoundland, where they outfitted, except for canoe and tent and personal equipment, which had been taken from New York. By steamer they continued from St. John's to Indian Harbor at the mouth of Hamilton Inlet, on the southeast coast of Labrador, where a sailboat and a second steamer took them fifty miles west to Rigolette, and at the latter place another steamer conveyed them ninety miles farther west to Northwest River Post, a station of the Hudson Bay Company. This was the real starting point of the trip, and is near the head of Hamilton Inlet on the small Northwest River.

They left Northwest River Post in high spirits on July 15th. It is three miles from the Post to Grand Lake, which is about thirty-seven miles long and runs east and west more than north and south as the maps wrongly indicate. The Nascaupee River heads in Grand Lake and makes northerly and then westerly towards Lake Michikamau—which was the water most important for Hubbard to reach. But Low's map, which Hubbard

Copyrighted, 1905, by the OUTING Publishing Company. All rights reserved.



Labrador, with relation to Quebec and Hudson Bay.

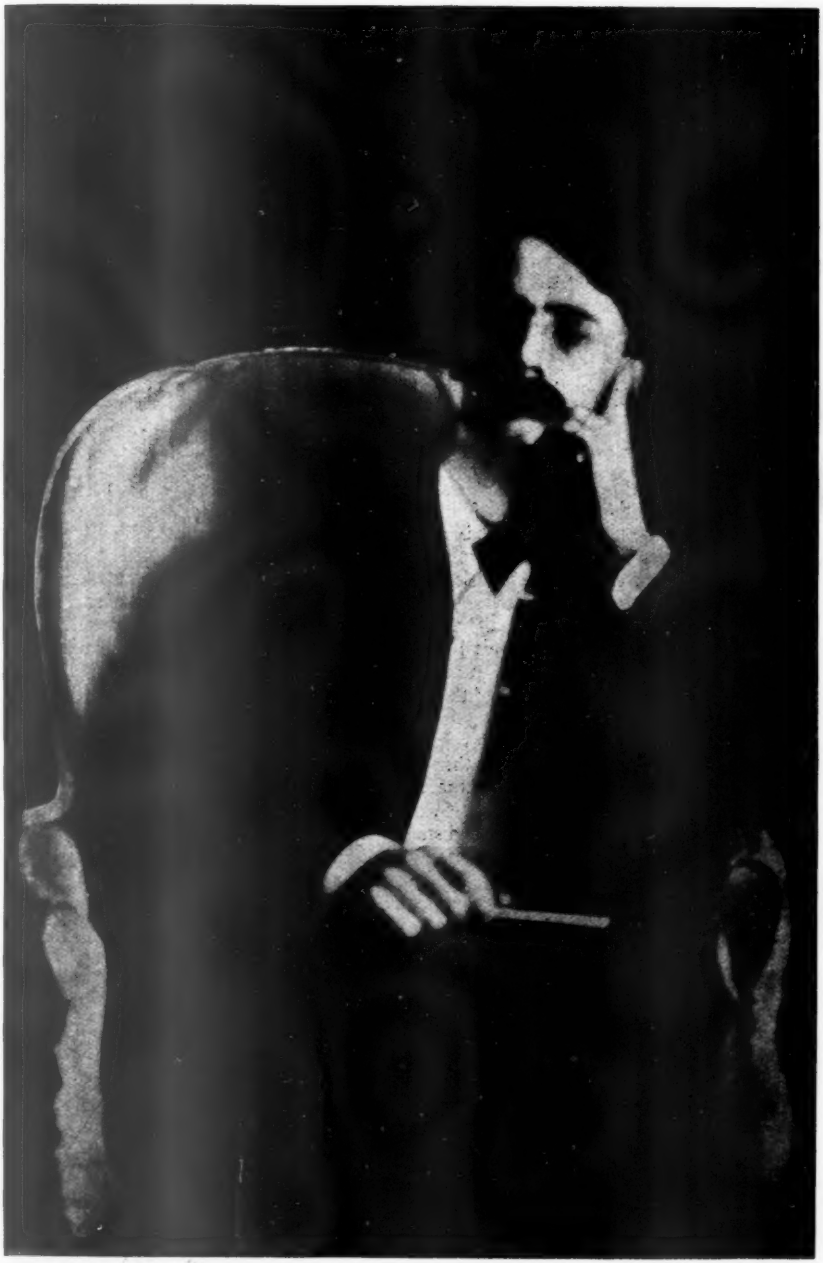
carried, places the Nascaupee River incorrectly, and Hubbard missed it, going up a small rapid stream known as the Susan River. With great toil they made their way up this river until July 31st, when they left it and struck across country to the west, coming upon what they called the "Big River"—but what is really Beaver River. The difficulties with which they contended, the already accumulating food embarrassments because of unexpected delay, are pathetically told in the simple language of Hubbard's Diary.

They continued up Beaver River to its source, passing through several good-sized lake extensions en route, until finally they came to a larger lake at the head waters of the Beaver River referred to in the Diary as "Ptarmigan Lake."

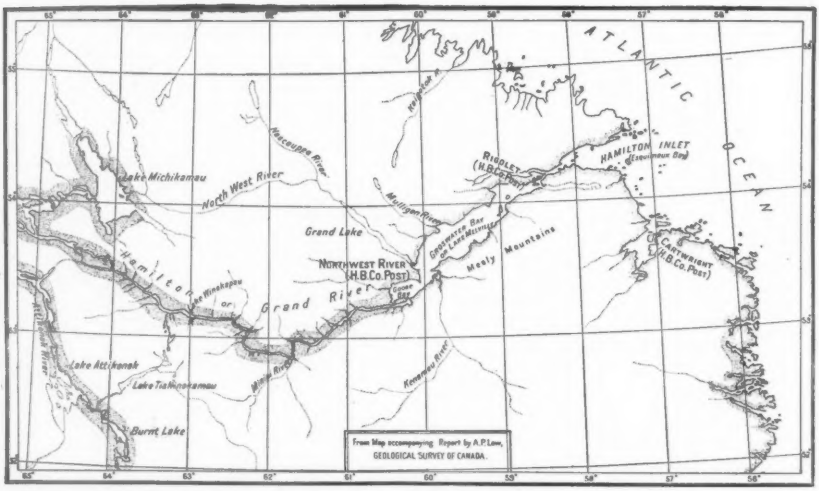
From "Ptarmigan Lake," or head waters of the Beaver River, they portaged their entire outfit through a pass in the mountainous wall which confronted them on the northwest, and came upon old Indian cuttings and trails and other lakes referred to in the Diary as "Hope Lake" and "George's Christmas Tree Lake." They paddled through two lakes and then portaged across a neck of land about two miles to a bigger lake. Around this larger lake they paddled for several days, as the Diary graphically describes, looking for an outlet. Finding none, and impressed with the necessity of reaching Michikamau Lake, they started overland a little west of north, packing canoe and all their outfit, for a thirty mile portage—the "Long Portage" of the Diary.

At the end of the portage they came to a big lake, quite the biggest they had seen; and here for two weeks they were forced to remain because the water continued too rough for their small canoe. Here they awaited a lull in the wind that would quiet the water and permit them to go on to Michikamau—which they could see from the top of a nearby high barren hill they had ascended in scouting for some sign to tell them where they were. But no lull came; and valuable days slipped past while they waited, catching fish to give them enough food for the forward march—enough indeed, for very existence in camp.

With Michikamau in sight, and the George River only twelve miles from the Lake's upper waters, urgent and earnest were the united prayers of the party that the wind might



Leonidas Hubbard, Jun.

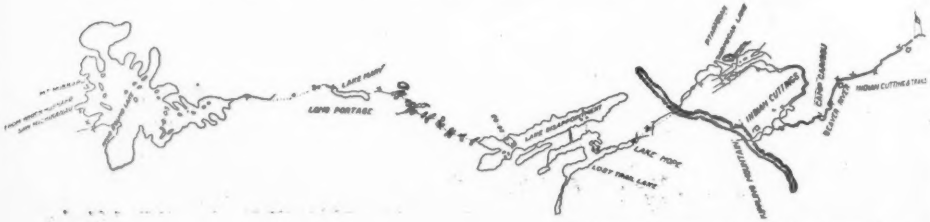


Detail Low map showing Northwest River Post, the incorrectly mapped Northwest River, and the country Hubbard entered west of Grand Lake.

drop, that sufficient food might be found, that something—anything—might happen, to enable them to go on to a successful issue of the trip. Prayers urgent and sincere—but futile. The wind continued to blow, fish more difficult to catch in sufficient numbers; and soon realization came to the travelers that it was now no longer a question of the trip's success, but of escape with their lives. Ahead were storm and the unknown; south-east, a trail they knew, by which they might escape from the gripping fingers of winter rapidly closing upon them, to the Northwest River Post about two hundred and fifty miles distant by the route they had come.

So on September 20th they turned their backs on Michikamau, and started for the Post. The way was now familiar, but disappointment at their failure to reach George River, and weariness of body, illy fitted them for the exhausting effect of travel on failing rations. It seemed to wear on Hubbard more than the others, partly no doubt because of his feeling of responsibility, as leader of the expedition, and partly because he had not the reserve physical force of Wallace or Eleson. Gradually it wore him out. One day he had to abandon the pack—under which he had staggered that he might continue to do his share and not add to the burdens of the others—and then two days later followed in rapid succession his collapse, the consultation, the starting out of Wallace and Eleson for food and assistance, the last entry in his Diary on October 18th, and the peaceful passing away of as brave and gentle and lovable a soul as ever breathed in human form.

Twelve miles from where Hubbard made his last camp were three pounds of flour; twenty-five or twenty-six miles farther was the head of Grand Lake, and Donald Blake's food cache. And it was less than forty miles from that cache to the warmth and plenty of Northwest River Post from where they had all started. The plan agreed on at that last



Sketch-map of the route of the Hubbard party from

pathetic conference of the three starving men, was that, having found the flour, Wallace should go back with the scrap to Hubbard, and that George should go out to Blake's and bring in help. It was the 18th of October that George and Wallace set out from Hubbard. On the 19th they found the flour, and on the 20th Wallace and George parted; Wallace starting back to Hubbard, and George pushing on the remaining twenty-six miles to Blake's cabin at the head of Grand Lake.

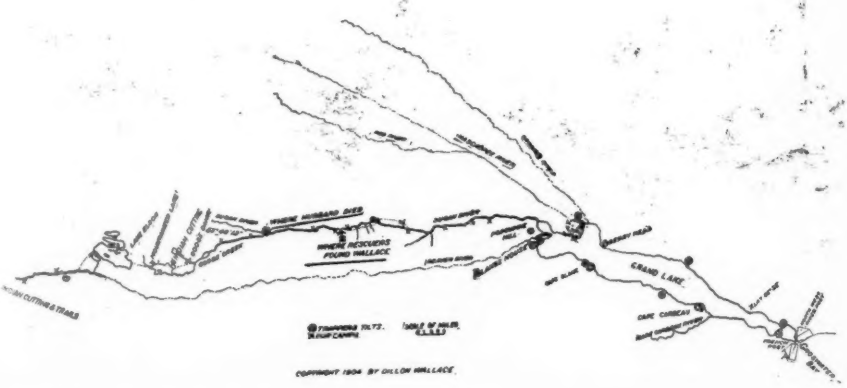
October 27th George reached the cabin, and immediately sent back Blake and three others with provisions. On October 30th these four men found Wallace just on the point of collapse, not far from where he and George had separated; for twelve days he had wandered about in continuous snow storm—too baffled to find his way until finally, too weak to move at all. Two of the four went on immediately to Hubbard, whom they found rolled in his blankets as sleeping—the closed Diary placed in its canvas bag at his side, and the pencil near at hand for the next entry.

Hubbard's body was wrapped tenderly and completely in furs, and left where he had died, securely protected against the wild beasts of the woods. The party that went to fetch it to the Post in March, preparatory to its long overland journey to the coast—found it under eight feet of pure white undisturbed snow—as fitting sepulcher as man ever had.

The rescuers of Wallace took him on to Northwest River Post, which they reached November 6th, and there and at Hamilton Inlet, where he was later carried on dog sledge—Wallace lay under medical care for weeks while his frozen feet healed—and he recovered from the exposure which had all but cost him his life. From here on December 21st started the telegram announcing Hubbard's death, which was carried three hundred and twenty-five miles by the Hudson Bay packet to Chateau Bay, and reached the outside world a month later.

Once recovered, Wallace set about preparing to bring out the body of his friend, and this was a task that proved nearly too much for him to accomplish. First he had to overcome native prejudice against such an undertaking, then combat local influence to have the body buried at the Post, and finally, the difficulty of getting dogs and drivers. But at last he succeeded, and in his success and in that three hundred mile journey to the coast, Wallace paid never-to-be-forgotten tribute to his friend Hubbard, and to the friends whom Hubbard loved. They left Northwest River April 22nd, reached Battle Harbor, May 12th, and arrived in New York, May 27th. On the following day Hubbard's body rested finally at the end of its long journey in a beautiful spot on the hillside overlooking the Hudson at Haverstraw, near the little house that had been home to him until he started for Labrador. Here in vigorous health and exuberant life often had he roamed, or sat looking down upon the noble river, dreaming the dreams of the wanderlust call.

And his spirit goes marching on.



Grand Lake to where they turned back within sight of Lake Michikamau.

George

Mackenzie Wallace

Starting out from the Northwest Post—photograph taken morning of July 15th. The canoe loaded with the Hubbard party equipment.

THE DIARY OF LEONIDAS HUBBARD, JUN.

Tuesday, July 7th.—Landed this A.M. at Indian Harbor. George and I went ashore in canoe; Wallace in ship's boat. Lot of fishermen greeted us. Find all men and women on the coast are Newfoundland men and "Livyeres" (Live here). The former come up to fish in summer and are the aristocrats; the latter are the under crust. Could not get any one to take us to Rigoulette.

Spent the P. M. getting outfit together—assorting and packing—weighing and trying it in the canoe—while line of Newfoundland salts looked on, commented and asked good-natured questions.

Canoe 18 ft., guides special Oldtown canvas; weight about 80. Tent—miners' tent, pole in front, balloon silk; weight 6 lbs.; dimensions 6½x7. Three pairs 3-lb. Abercrombie & Fitch blankets; two 4-lb. single blankets; two tarpaulins, about 6x7; three pack straps; 2 9-inch duck waterproof bags. Hold 40 lbs. flour each; 3 12-inch bags; 3¼x4¼; 30 rolls films, 1 dozen exposures each, in tin cans, with electricians, tape waterproofing; 1 doz. small waterproof bags of balloon silk, for sugar, chocolate, note-books and sundries. Wallace and I each have one extra light-weight 45–70 rifle, smokeless powder. Also one pistol each, diamond model, 10-inch barrel—for partridges. For grub we have four 45-lb. sacks of flour; 30 lbs. bacon; 20 lbs. lard; 30 lbs. sugar; 14 salt; 3 or 4 lbs. dried apples from home; 10 lbs. rice; 20 lbs. erbswurst; 10 lbs. pea-flour in tins; 10 lbs. tea; 5 coffee; 6 chocolate; 10 hardtack; 10 lbs. dried milk. Put it all in canoe. Got in ourselves, and found we could carry it O. K. Did some packing. Could carry 135 lbs. easily. Did not try more, but am sure I can handle 150 to start with.

Wednesday, July 8th.—Took observation at noon. Lat. 54° 28′. Then Steve Newell—a livyere—from Winter's Cove, offered to take us to Rigoulette for $15. Started in the *Mayflower*—a leaky little craft—about 5 P.M. No wind to speak of. Cold drizzle and fog. About 11 we landed at Winter's Cove. Nasty place to land among the rocks on a desolate point. From a shanty on the beach came a yelling and hallooing from several voices to know who we were and what we were doing. Went into cabin; two rooms—one frame, one sod. Room about 12x14—desolate. Two women like furies—ragged, haggard, brown, hair streaming. One with baby in her arms; two small girls and a boy. One of women Steve's mother. Dirty place, but better than the chilling fog. Glad to get in. Fire started. Stove smoked till room was full Little old lamp—no chimney. We made coffee and gave coffee and hardtack to all. Women went into other room with children. George, Wallace and I spread tarpaulin and blankets, and lay on the floor; so did Steve. Women talked loudly.

Thursday, July 9th.—Started at 5 A.M., launching boat after Steve had said, "Don't know's we can launch her, sir." Fog. Offered Steve chart and compass—"Ain't got no learnin', sir. I can't read." So I directed course in fog, and Steve steered.

Later, clear—fair—high wind. Steve cool, nervy, tireless. He traps foxes and shoots partridges in winter. Buys flour and molasses. Got too windy to travel. Landed at Big Black Island to wait for lower wind. Bought salmon of Joe Loyd. Lives in 10x12 shanty, hole in roof for smoke to escape. Eskimo wife. "Is all the world at peace, sir?" He came from England. Hungry for news. Had trout smoking in chimney. A little wood on this island, and moss, thick and soft.

Did not pitch tent. Wallace and I threw tent down and lay on it. Pulled his blanket over us, and slept. Whales snorting in the bay. Big gulls croaking. Bright moonlight. Still sunlight at 11. Am very anxious to reach Rigoulette, so intend to get up early. Had Steve get boat about to place, he says will leave it close to water at low tide. Nervous, and not sleepy.

Friday, July 10th.—Awoke at 1 A.M. Bright moonlight. Made coffee and milk. Called men. Portaged outfit 200 yds. to boat. Found her high. Worked till 4.30 to launch. Little wind. Made Pompey Island at 11. Saw many whales and seals. Caught caplin on fishhook tied to stick—jerking them. Stopped on Pompey for lunch. Mossy island of Laurentian rock. Saw steamer in distance. Thought it was Dr. Simpson in *Julia Sheridan*. Put off—fired three or four shots. Got only a salute. Wallace and I put off in canoe to head her off. She came about—was the *Virginia Lake*. Took us on board,

Starting out from the Northwest Post—photograph taken morning of July 15th. The canoe loaded with the Hubbard party equipment.

Running down the Beaver River.

Packing over the Early Portages.

Drying Clothes and Making Bread on the Susan River.

Hubbard on the Trail.

Camping on the Site of the Caribou Killing

Resting, Protected from Mosquitoes, after a Hard Days' Portage on the Susan.

George drying Brook Trout.

brought us to Rigoulette. Mr. Frazer, H. B. C. Agent, to whom I had letter from Commissioner Chipman of the H. B. Co., took us in, as the Company's men always do. Made us at home. Seems fine to be on land again at a Company Post.

Eskimo dogs, Eskimo men and women, breeds, lumbermen, trappers, fishermen, two clerks. All kindly—even the dogs. All talkative and hungry for outside visitors.

Saturday, July 11th.—Trying to get data as to Northwest River. No Indians here. White men and Eskimo know little about it. Capt. Joe Blake (breed) says Grand Lake good paddling—forty miles long—Nascaupee River empties into it. Says "Red River" comes into it about 15 miles above its mouth. His son Donald came from his traps on Seal Lake to-day. Says same. Has crossed it about fifty miles above mouth in winter. Has heard from some one that Montagnais Indians say it comes from Michikamau. Does not know. Says it is shallow. This seems to be what Low has mapped as Northwest River. Donald says not much game on it. Others, who have not been there, say plenty. All report bear. Man who lives on river just above Grand Lake in winter to trap, missing. Supposed drowned. Donald says "a chance seal" in Seal Lake. Has shot 'em, but never killed one. Little game there to eat. May be fish—does not know. Does not fish himself. Takes flour, pork, tea and "risin." Porcupines—we can live on them. Hard to get definite data—but that makes the work bigger.

Sunday, July 12th.—The *Pelican* came in to-day from England. Stole in in fog and whistled before flag was up—good joke on Post. Big day. *Pelican* goes from here to York, stops at Ungava on way out and comes back again. Brings supplies. Capt. Gray came on shore. Has been with Company thirty years. In Northern waters fifty years. "You'll never get back," he says to us. "If you are at Ungava when I get there I'll bring you back." Calder—lumberman on Grand River and Sandwich Bay here, says we can't do it. Big salmon baked and stuffed for dinner—bully. George says he's ready to start now. Prophesies that we can't do it don't worry me. Have heard them before—Can do it. WILL.

Monday, July 13th.—This noon the *Julia Sheridan*—Deep-Sea Mission boat—Dr. Simpson—came. We said good-by, and embarked for Northwest River.

Tuesday, July 14th.—Landed at Northwest River about 2 P.M. Thomas McKenzie in charge. Bully fellow—all alone—lonesome but does not admit it. Tall, wiry; hospitable in extreme. Not busy in winter. Traps some. Wishes he could go with us. Would pack up to-night and be ready in the morning. Can get no definite information as to our route. McKenzie says we are all right; can make it of course. Gave way bag of flour. Discarded single blanket, 5 lb. can lard. Got, at Rigoulette yesterday, 10 lbs. sugar, 5 lbs. dried apples, 4½ tobacco. Bought here 5 lbs. sugar. McKenzie gave me an 8 lb. 3 in. gill net.

Wednesday, July 15th.—Wind light S. E. all day; light clouds. Lat. noon 53° 35′. Left Northwest River Post 9 A. M. Camped 7.30 P. M. Camped early because of rain and stream which promised trout. No trout caught. For lunch pancakes and syrup of melted sugar. Went to spot and made us feel bully. Made four miles per hour for a time. Cups of pea soup at 5. No fish or game. Lake looks like Lake George, with lower hills. Much iron ore crops from bluffs on south side. Makes me a bit homesick to think of Lake George.

Thursday, July 16th.—Fair day. Wind S. E. Lat. at noon 53° 45′.

Six miles above Grand Lake on Northwest River. Started at 5.30 A.M. At 9 rounded point and saw mouth of river. Lake only 32 miles long—not 40–45. George and I ferried outfit across northwest arm of lake in two loads. Wind too high for whole load. Saw steel trap—probably belonged to poor McLean, who was drowned. Had cup of tea at 10. Stopped at noon three-quarters hour for observation.

Northwest River runs through a spruce-covered valley, between high hills—easily seen from lake, but not in river as spruce is too close. In many places high banks, many turns. Many little rapids. Water low. Have to pole and track. See that we have our work cut out. Doubt if we can make more than ten miles a day up this river. I took tracking line; George and Wallace the poles. Made less than four miles from 3 P.M. till 7.30. Will probably be worse after we pass mouth of Nascaupee River. None of us is depressed at outlook.

It has been a good day. The boys are full of courage. "Shall we throw away stuff?" I asked. "Let's try a little longer," said George. Canoe too heavily loaded for depth of water. If worst comes to worst we will abandon large part of outfit and portage whole thing to height of land. Slow, but a way out. Sand-flies awful—nasty, vindictive; bite out chunks and streak our hands and faces with blood. Mosquitoes positively friendly by contrast. Tried net—could not see; then tried dope—some help. Eating much and not rustling for fish or game. Want to lighten outfit. Pancakes, bacon and melted sugar at three o'clock—bully. Dried apple sauce and hot bread, bacon, coffee with milk, for supper at 8.30—bully. Apples and abundant sugar great comfort. Keep us feeling good and sweet and well fed.

Friday, July 17th.—Rain and clouds. Rained hard in the night. Awoke, dreading to start out in it. Water so shoal and swift that we would take part of outfit and return for the rest. Most places had to track, I pulling rope while Wallace and George waded and pushed and dragged the canoe. We are eating four meals a day. Eat our second meal about 10, third about 3; sometimes a snack when noon observation is made.

Saturday, July 18th.—Bright, clear day. Latitude 53° 45′ 30″.

Started out with full load and kept it most of day. Had to portage half load a few times. Awful work all day. Rapids continuously. I waded with line while George and Wallace dragged and lifted. All enjoyed the forenoon's work, and no one depressed when P.M. weariness began. Wallace shot red squirrel; first game of trip. Ate bread and tea at ten, pancakes at three. Camp at seven. Make good bed of boughs. It pays, I think. We are eating heavily on our stores—good to keep well fed. Want to lighten outfit. No game. Bear and some caribou tracks. Have not seen a partridge or porcupine. Seem to be few fish—they come later and farther on.

Sunday, July 19th.—Minimum temperature last night 38°. Fine day and warm. Stayed in camp all day to rest. I got up at 7 and caught about 20 trout, small. All pretty tired and enjoyed the long sleep. At noon George and I started up the river, following the hills. Found small, rocky stream coming in about one mile up. Suppose it is the Red Wine River. Two miles up a two-mile stretch of good water. Best of all the portage route leading in at the foot. We followed this over the hill to the Red Wine River and found old cuttings. This pleases us a heap. It shows that we are on the old Montagnais trail, that we will probably have their portage routes clear through, and that they probably found lakes and good water farther up, or they would never have made these long portages and fought this bad water. Tomorrow we will tackle the two-mile portages with light hearts. We are thirty miles south of where Low's map places us. Am beginning to suspect the Nascaupee River, which flows through Seal Lake, also comes out of Michikamau, and that Low's map is wrong. Bully stunt if it works out that way. Saw lots of caribou and fresh bear tracks. Trout went fine for supper. Flies very bad; our wrists burn all the time.

Monday, July 20th.—Minimum temperature last night 37°. Bright day. Flies awful. I got breakfast while George cut portage through swamp, then we groaned all day—through the swamp 1½ miles—across two streams, up steep hill, then along old trail to foot of smooth water above these rapids. Covered route mainly three times. All very tired. Tea and bread and bacon at noon; pancakes for supper. I found 75 pounds a plenty to pack. Glorious night, bright and starry. Mercury dropped suddenly, as it has always, down to 45° soon after sunset. Too cold for flies. Bully bed on moss and spruce. Bully camp fire. Good supper; cakes, bacon, syrup, chocolate. After, sat about fire and drank pea soup. Never had a better evening in camp. Worth the day's toil.

Tuesday, July 21st.—Minimum temperature 36°. Tracked bad ¾ mile. George and I scouted ahead 6 miles. Climbed hills 600 ft. high. Caribou and bear tracks. Crossed two or three creeks. Found old trail and wigwam poles and wood. George says winter camp, from size of wood; can't follow it. Tracked ¼ mile more and started on long portage. Went ½ mile and camped. Flies bad; gets cold after dark, then no flies. Stars, fir tops, crisp air, camp fire, sound of river, hopeful hearts. Nasty hard

work, but this pays for it. Wallace caught mess of trout.

Wednesday, July 22nd.—Minimum temperature 33°; 60° in tent at 6 A.M.

Torture. All worked across 2½ mile portage. Sun awful. Flies hellish. All too tired to eat at noon. Cold tea and cold erbswurst. Cached 80 rounds 45–70 cartridges, 300-22's. Too heavy. Too tired at last to mind flies. Rested hour under tent front, all of us. Diarrhœa got me—too much water-drinking yesterday, I guess. Shot partridge—first seen on trip. Jumped up on log before me; waited for me to drop back and load pistol. Camp on Partridge Point. Bird seasoned a pot of erbswurst.

Thursday, July 23d.—George and Wallace scouted for trails and lakes. I lay in tent—diarrhœa—took "Sun Cholera Mixture." Tore leaves from Low's book and cover from this diary. These and similar economies lightened my bag about 5 lbs. New idea dawned on me as I lay here mapgazing; portage route leaves this river and runs into southeast arm of Michikamau. Will see how guess turns out. Heat in tent awful—at noon 104°; out of tent at 1 P.M., 92°. Diarrhœa continued all day. No food but tea and a bit of hardtack. George back about 7.30. Wallace not back. Not worried. Has probably gone a little too far and will stay out. Has tin cup and erbswurst. George reports branching of river and a good stretch of calm water. George fried dough and ate it with melted sugar. I toasted some bread and drank some tea.

Friday, July 24th.—George produced a yellow legs, shot yesterday. Diarrhœa. In tent I studied how to take time with sextant. Observation failed. Much worried over Wallace till he came in about 7 P.M. Compass went wrong; he lay out over night. Stewed yellow legs and pea-meal to-night.

Saturday, July 25th.—Four miles. Weak from diarrhœa. Portaged one load each four miles—South side of stream to open water. Back to camp—I took another pack; George and Wallace followed, trying to drag canoe up river. I made camp. They came in after dark, tired out. Canoe left two miles down stream. Wallace shot partridge with pistol. Came near going over falls with pack round his neck. Drizzled all day. Heavy rain to-night—great relief from heat. Flies very bad in afternoon and evening. No supper but bread and tea.

Bully camping places everywhere. Plenty spruce boughs, good wood and water. High sandy ridges. Moss. Made a fireplace of green spruce here. Great hopes of good water ahead.

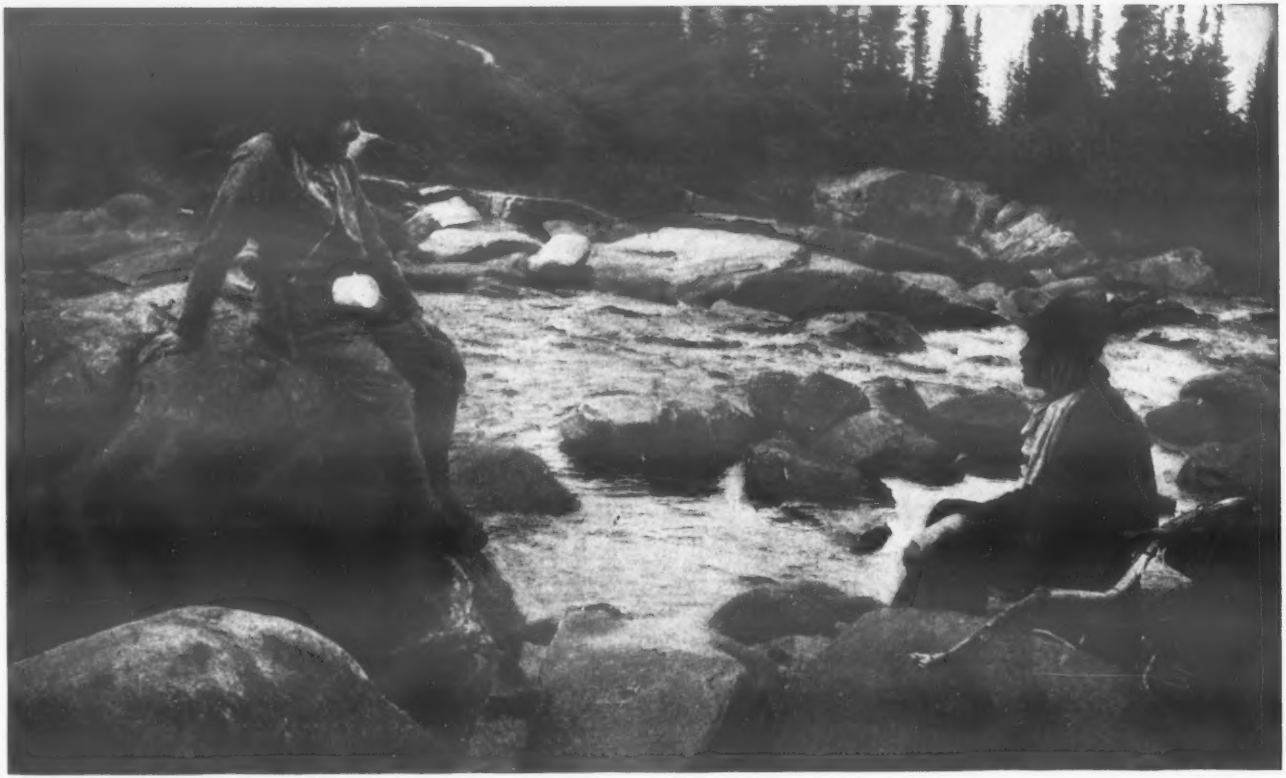
Sunday, July 26th.—Rain most of the day. Lay in tent in A.M., hoping to be better of diarrhœa. Read Low's report, etc. Trouble better. Wallace not eating well till noon, then George made stew—rice, bacon, partridge—bully. Wallace ate with gusto—so did we all. While boys smoked I had a lump of chocolate and some sugar, which left a good Sunday dinner effect. Glad of the rain—raise river—cool—few flies. Caught 22 small trout. Hot fried trout, apple-sauce, bread and tea—fine supper.

Monday, July 27th.—Spent A.M. and two hours P.M. bringing up canoe, dragging half way, George carried rest. Started on at 4, alternate pools and rapids. Rapids not bad—go up by dragging and tracking. After 1½ mile camped. All very cold. Wet all day. Good camp—dried clothes—ate hot rice boiled with bacon. Typical fall wind. Flies not bad in morning—none to-night. Spell from noon to 4. Saw partridge; George shot three times—missed.

Tuesday, July 28th.—Temperature 6 A.M. 46°. Three miles. Cool—cloudy—spell of sun now and then. Cold, nasty wading all A.M., to make a mile. Fine portaging in P.M. Just cool enough—no flies. Pretty nearly blue in A.M. over lack of progress. Two miles in P.M. brightened things up. By fire between logs, we dry clothes now in evening. Rice and bacon soup. Fried dough and syrup, tea. All tired out. Low new moon.

Wednesday, July 29th.—Temperature 6 A.M. 58°. Worked four miles. Small ponds alternating with rapids. Portage 1 mile in P.M. Very tired. Tea and finished fine. Feel better with pack than without when very tired. Caught a dozen trout for supper. Cut off syrup—sugar down to about 25 lbs. Bacon short—*must* get fish. Pea soup, fish, bread, tea, supper. Go over portage now in two trips.

Thursday, July 30th.—Temperature 6 A.M. 39°. Two toe nails came off last night. Another ready. Patched my heel with gun rag and electrician's tape. Last



The Rapid and Rocky Susan River.

night bad for sleep. Too wet and bad bed. Got up, stirred fire and sat till daylight. Dropped to sleep and slept till 5.15. Paddled through a succession of ponds about ¼ mile long each. Tracking or dragging over little falls or rapids between. Made portage of 100 rods in P.M. and George and Wallace got lost carrying canoe far out of way. Lost 3 hours—about. Made 4½ miles and felt fine but for time loss. While they were lost I caught trout, about 25, and we had bully plate of fried fellows to eat with hot bread and tea. Need fish now—grub not so heavy as it was. Were starting to dry blankets at fire when rain started. All crawled into tent. Need it to raise river. Plenty caribou signs—two old wigwams (winter) on rock. No fish but 6 7-inch trout.

Friday, July 31st.—Temperature 6 A.M. 56°. Rain all day. Two rivers puzzled us. Came together just above our camp. One comes over a fall from the south side; other, rough, comes from northwest; south branch comes from west; south better, more level. Little ponds between falls and short rapids. Scouted. Think south branch Low's northwest river. Wallace caught bully mess of trout while George and I were scouting. George found old wigwam about ¼ mile up South branch; also a winter blaze crossing stream north to south—fresh—trapper's line, think. Blake or McLean. Wigwam old. Rain bad. River not very good—some ponds—some portage—some dragging. Up south branch ¾ mile stopped for lunch. Fried trout, fried hardtack, tea. Stopped after ¼ mile portage for a scout. Wallace and I made camp in rain while George scouted. George reports 1½ mile bad river, then level, deep, ponds, very good. Caught trout—broke rod. Trout, bread, pea soup, tea, go to spot. Rainy camp. Blankets feel good. Lots of dry tamarack wood. Saw partridge. Had no gun. No bear signs lately. Some caribou signs. No caribou. Lard nearly gone. Bacon low. Got to hustle grub soon. Trout help and are gratefully received. Don't know what we will do with them when lard gives out. Don't care much for dessert. Like our plain grub bully. My only pants giving out. Right knee. Moccasins of whole party badly worn.

Saturday, August 1st.—Rain all day. Rained steadily all night and to-day. Tired, chilled, ragged. Wallace not well and things damp. Staid in camp all day. Hoped to dry things out. Too much rain. All slept most of day. Pea soup, fried bread, tea for breakfast. Rice and bacon soup, chocolate, for supper. Went out in bare feet and drawers and caught ten trout. No dinner. Slept.

Sunday, August 2nd.—Cleared this A.M. Boys dried camp while I caught 24 trout—some ½-pounders—getting bigger—nearer height of land we hope reason. Water higher—will help us. Two cans baking powder spoiled. Good feed of trout. Not a bit tired of trout yet. Observation shows 53° 46′ 12″ Lat. Went 3 miles in P.M. and camped. Pea soup, bread, tea for supper.

Monday, August 3d.—Temperature 6 A.M. 56°. Big day. At foot of a portage, as we were getting ready to pack, I saw four wild geese coming down stream. Grabbed rifle, 4 cartridges in it. George got Wallace's rifle. All dropped, waiting for them to come round bend, 30 ft. away. George and I shot at once, both hitting leader. All started flapping along on top of water, up stream. I emptied my rifle on them, going at 40 to 50 yards, killing two more. Drew pistol and ran up and into stream, and shot fourth in neck. Got all and threw fits of joy. Need 'em just now badly for grub. Bacon short, flour getting toward low point. Through little lake, beginning at head of water ¼ mile above, into meadow, fresh beaver house. At foot of rapid water, below junction of two streams, ate lunch. Trout ½ to ¾ lb., making water boil. Caught several and had big feed. Not tired of 'em—taste bully. Tea, too, tastes better every day. Bread becoming a luxury, though have not started to go slow yet. From this point, where river branches to two creeks, we scouted. Think found old Montagnais portage. To-night heap big feed. George built fire as for bread baking. Two forked sticks at one side—cross-pole—string round goose—pin through at legs—another at wings. String from cross pole over each end of one pin in noose. Goose hangs low—just enough from ground for plate under to catch gravy. Gives it a whirl now and then. Lower end bakes first. Sticks stick in. Juice white—done. Turns other end down. Cooks in about two hours. Smells like Christmas

goose when one goes through the kitchen dead hungry before dinner. Done at last. All sit by fire in dark, and eat and eat. George eats no bread. Tells of geese at Bay, of Indian feeds, rather goose than caribou. One piece left. George puts giblets to stew for breakfast. Extra pot ten. Sit long time. Geese, portage and big trout make us happy

My only pants ripped clear down front of leg. Don't know how to patch 'em. No stuff. See trouble ahead unless can think of some good scheme. Spirits high.

Tuesday, August 4th.—Temperature 6 A.M. 56°. Portaged one mile to Montagnais Lake. Portage ran through bogs and over low ridges. I sat on edge of lake looking at rod, when a caribou waded into lake, not 100 ft. away. Rifle at other end of portage. Hoped to find inlet to lake, but only one ends in bog. Lots of old cuttings at northwest corner of lake; two old wigwams. Troubled to know where to go from here. All scouted whole afternoon. Lake 1 mile west. Old trail runs toward it. George thinks caribou trail—no cuttings found on it yet. I think portage. Looks like portage we have followed, and runs in right direction. Wallace caught eight fair trout where inlet runs in. Caught nothing trolling. George reports big hill 15 miles west. Wallace shot muskrat. Bread, chocolate and giblet stew, with rice, for breakfast. Tea and bread lunch. Boiled goose for dinner. No bread, but some pea-meal in goose liquor for good soup. Mosquitoes—millions. Patched pants—white duffel—looks distingué. Shower 2 P.M. North wind. Rain to-night.

Wednesday, August 5th.—Portaged from camp on Montagnais Lake 1 mile west to another lake. No signs of Indians here. Camped at west end of this. Climbing ridge, saw that lake empties by little strait into other small lake just alongside, at south. Stream flows from that south, therefore we are on Hamilton River waters. George and I went scouting to bluffs we saw from trees on ridge. Both lost. George got back before dark. I spent night on hill, 2 miles southwest. No matches or grub, and clothes wet. Scared a little. Heard big river, found it flows southeast. Must go into the Hamilton, but it is a big one, several times as big as the Northwest at its biggest. Where does it come from? Can it be Michikamau? Saw two caribou. Dropped pack and grabbed rifle. Was waiting for them 250 yards away, when a cussed little long-legged bird scared them. At point near camp where lakes meet, I cast a fly and took half pound and pound fontinalis as fast as I could pull them out. What a feed at 2 P.M. lunch.

Thursday, August 6th.—Slept some last night, lying on two dead spruce tops; too wet and cold to sleep very well. Mosquitoes awful. Got home about 5 A.M. The fellows knew I had no matches and were scared. Caught big mess trout while George was building fire. George went to my river. Wallace and I took canoe and went into lake north of here. Cuttings—winter. George found river to be big and deep—straight, as though from Michikamau. Don't believe this little creek of the Northwest comes from there. Will portage to this little river and try it. Flour low—rations one-third loaf per man per day from now on. Lard gave out. Ate last goose roasted for supper. Hung 45 trout to smoke and dry. Carry emergency kit now. Matches, hook and line and waterproof film case.

Friday, August 7th.—Portaged two miles to river on our south; good paddling, save for a rapid now and then. So big we think, Low's map to the contrary, that it comes from Michikamau; anyway it comes from that way and will carry us a piece toward Big Lake. No cuttings. Camped tonight at foot of rapid on a rising plateau. Cold wind drove away flies. Fire between big rocks; moon over bluff beyond. Big trout, despite east wind—caught about 15, 1½ lb. down to ¼ lb. Ought to be bully river for big fellows when weather is good. Goose gave out to-day; fish plentiful. Coffee for supper; bread and fried trout. Sick at lunch and did not eat. Fine evening. Fine river. Fine world. Life worth living. Pants torn open in front again. Wallace patching moccasins with canvas leggings.

Saturday, August 8th.—Nasty, cold east wind. Went 4½ miles through it, all in good river with six short portages, first ¾ mile, and stopped about 1 P.M. to make Sunday camp, and get fish. Put out net, ate our dried fish and by hard labor got a few more for supper. Only a bit of bread a day now; no grease save a little bacon; all hungry for flour and meat.

Sunday, August 9th.—Raining this morning and most of the A.M. Cold, east wind. Caught about 45 trout by hard effort, several ¾ lb. each. George made paddle and scouted. Burned his knife. Wallace repaired moccasins and then scouted and looked for caribou. George and I ate peameal and boiled fish-liquor for breakfast—not bad. Wallace ate two trout. Besides this we had each one-third of a thin loaf of bread, and chocolate with the taste of sugar in it. We crave bread and sugar—boiled fish, some way, don't satisfy, but I guess they'll pull us through to caribou time. Wallace and I talk of restaurants, and what we would do if we were in New York—we would take bread and pie and chocolate, mainly. Like to think how much of it they have at home, and how I'll gorge when we reach the first Post. Hope to make good time from now on, to see Michikamau soon and to get on to Caribou grounds. No fish in net to-day. Trousers badly torn again.

Monday, August 10th.—Rain and east wind. Caught one big fish before breakfast. On first portage found old summer cuttings and wigwam poles; feel sure this was the old Montagnais route. Went three miles and crossed four portages, then on strength of being on right road, and needing fish, camped before noon. Caught about a dozen ¾-lb. trout. Ate them for supper with one loaf of bread, coffee and a little pea soup. Hope fish will bite in A.M. Intend to wait till rain stops and wind changes, so we can dry up more fish for a bad day. Mother's birthday. Ate some of her dried apples last night without sugar.

Tuesday, August 11th.—East wind; warmer, a little. Just a little rain. No fish biting. Slept late and ate pea soup, chocolate and loaf of bread for breakfast. Climbed ridge and tree; see ridge of high, half-barren hills away ahead—think this the ridge east of Michikamau. Hungry all the time. Bit of bread, no grease and no shortening, like choicest dainty. Down to 40 lbs. of flour, 8 lbs. tea, about 20 lbs. peameal, a bit of sugar, bacon, baking powder and dried apple—just a bit of rice. *Must get grub.* Need fish and caribou. Think plenty trout here, but this blamed east wind and cold keeps them from biting. Started about 2 P.M., mainly hoping to get to good fishing place. Tried foot of each rapid. Stopped and had big supper. Saw mountains ahead from a bluff just below our evening's camp. River runs to north, apparently; it must, therefore, be Low's Northwest River, I think. Mountains look high and rugged, 10 to 25 miles away. Ought to get good view of country from there, and get caribou and bear. Moccasins all rotten and full of holes. Need caribou. Need bear for grease. All hungry all day. George weak, Wallace ravenous, lean, gaunt and a bit weak myself. Fish braced us wonderfully. Coffee and bread (½ loaf each) after. Noon ⅔ loaf each and tea.

Wednesday, August 12th.—Best day of trip. Started late. Cloudy, damp. I took pack over one-half mile portage, and stopped to fish. Fourteen trout. Three portages, and then—glory! open water. Five miles and stopped for lunch, with good water before and behind for first time since Grand Lake. Old wigwam and broken-down canoe at lunch place. Ate trout and loaf bread. Hungry. Started again, hoping for a stream to fish in. Made three miles. Then a big bull caribou splashed into the water of the bayou 200 yards ahead. Wallace in bow took shot, high and to the left. I raised sights to limit and held high; did not think of sport, but grub, and was, therefore, cool. At first shot George said, "Good, you hit him." He started to sink, but walked up a bank very slowly. I shot two more times, Wallace once, and missed. George and I landed and started toward spot. I found caribou down, trying to rise. Shot him in breast. Cut throat. George made stage for drying. Wallace and I dressed caribou. Wallace put up tent. I started meat from bones in good strips to dry. Then all sat down and roasted steaks on sticks and drank coffee, and were supremely happy. We will get enough dried meat to give us a good stock.

Thursday, August 13th.—Worked at getting caribou skin tanned in A.M. Ate steak for breakfast, liver for dinner, ribs at night. No bread—just meat. Wallace and I started in canoe to look for fish and explore a bit. Found rapid two miles above. Very short, good portage. Old wigwam; good water ahead. Too cold to fish. Cloudy day, but got blankets aired and dried. Had mess of dried apples without sugar to-night—very good. River seems to run to north-

east of ridge, of quite high mountains, 6 to 10 miles ahead. Very tired or lazy to-day; may be meat diet—may be relaxation from month of high tension—think the latter. Mended pants; one leg torn clear down front. Patched with piece of flour sack.

Friday, August 14th.—George and Wallace left in canoe with tin cups, tea and some ribs of caribou, to scout river above, and climb hills. I put more ashes and water on caribou skin. Just starting to shed. Studied map and Low's book. Wish we could descend this river on way out and map it. Ate caribou steak and chocolate for breakfast. No bread or anything but caribou and drink to-day. Lay in tent a good deal, very lazy and tired; slept a good deal. Wonder if it is meat diet or relaxation. Wallace and George not back to-night. Must have gone too far. Not hungry. Cup of tea for supper. Clouds with a sprinkle till late P. M., when it cleared.

Saturday, August 15th.—Cloudy again this morning. Sprinkle or two. Wallace and George not back. Made coffee and fine stew for breakfast. Put into pot boiling water small bit bacon chopped fine, cut little pieces meat from back bone of caribou and put in; boiled till done and stirred in pea-meal to thick porridge—salt and pepper—bully. Ate quart or more. No bread. Pea-meal best stuff in outfit—almost. Inactivity makes me feel depressed and useless. Went down to wash. Big trout in shallow water. Tossed fly; he rose—I struck. Missed. Tried again; he rose; missed. Tried again, and caught him. Caught four more. Wallace and George came at dusk, tired out and none too hopeful. Found stream coming from a little lake with two inlets; followed one west to mountains; turned to a brook; ended in mountains. Other went so much east they fear it ends in lakes there. Think maybe they lost the river. Hungry as bears. Staid out to explore this east branch; they had a meal of caribou ribs yesterday noon for lunch, 10 small trout last night, 2 ribs each this A.M. Complain of very cold time with little firewood last night. The three days' inaction and their story of doubtful river depresses me. If the way to Michikamau is still so doubtful, after more than four weeks of back-breaking work, when will we get there, and when to the caribou grounds, and when home?

Sunday, August 16th.—Wind has changed at last to north—not much of it. Clear and bright in early morning. Clouded at noon so I am not sure my observation was just right—close to it, though, I think. 53°-46′-30″. Have been coming nearly west, an angle to south and another to north. Last observation possible was two weeks ago to-day. Feel fine to-day. Good rest and good weather and grub are bully. Figure that east branch the boys saw *must* be Low's Northwest River, and must break through the mountains somewhere a little north. Anyway, it can't run much east, and must take us north and west through lake expansions close to the mountains. Then if it ends it's up to us to portage over to the lake expansions Low sees on his Northwest River flowing out of Michikamau. Scraped flesh from caribou skin. Three ¾ lbs. trout came at commotion when I went to wash it. Wallace came with fin and got 'em all. I took 3 more big ones around rocks in shallow just below. Wallace and I went to rapid 1½ mile above and got 30 more in an hour. Big supper. Two small loaves bread for breakfast; one for supper, with fish and coffee. Stewed heart for breakfast, tongue and boiled scraps, dinner. Supper bully and no one groaning for more. George boiled last of bones. Has quite a lot of grease now. We fry trout in it. Not up to lard or butter, but very good, we think. George has saved even the cracklings. Says we'll be glad to eat them. All feeling fine. Blankets and things dry and fluffy.

Monday, August 17th.—Temperature at 4.30 A.M. 29°. Temperature, noon 59°. Ice on cups—first of season. Beautiful, clear day; north wind—slight. Flies bad in P.M. Went west of north three miles, following river to where it began to expand into lakes. Noon observation 53°-43′-19″. Yesterday's observation wrong, I think. In A.M. fished few minutes at foot of short rapids. About 40 trout, one 16 inches long—biggest yet. Caught most on fins. Ate all for noon lunch, stopping at sand beach on shore of very pretty little lake expansion. Had coffee, too. In P.M. we turned west into some long, narrow lakes that extend into mountains and have a current coming out. George and Wallace think from a previous look that here is a P. trail to

Wallace on the Portage.

Michikamau's S. E. bay. George explored while I worked at skin. Caught big mess of trout in little while at two rapid, shoal places where lakes narrow to straits. About 35, mainly ½ lb.—some 1 lb. each. Ate all, with coffee for supper. Bully supper. We are all feeling fine. Better satisfied with grub. Not so much hankering for bread. Beautiful place. Mountains all about, lake narrow, and right at their feet. Roar of brook. Brown and gray rocks. Spruce trees. Clear, starry sky. Mosquitoes and flies; early to bed. George returned. No good, so far as he saw, to cross here. But he did not do the thing thoroughly. However, I'll let it drop here, for I believe the river goes east and north and then west about mountains and breaks through to Michikamau. Worried some. Time short and way not clear. But we'll get there, if we have to take the canoe apart and walk across. May have to stay late on the George, and have to snowshoe to Northwest River and then across, but if it comes to that, we'll do it. This snowshoe to Northwest River and across to St. Lawrence by Kenamon and St. Augustine Rivers appeals to me. Lots of old wigwams about, summer and winter. Stove was used in one. I think Indians hunted here. Caribou tracks on barren mountains.

Tuesday, August 18th.—Temperature 28° at 4 A.M. Clear sky in morning. Much worried last night and this morning about way to Michikamau. Started early, ready to go at the job harder than ever. Lake expansions, rapids, no signs Indians. Afraid this a bad stretch which Indians avoided. Stopped for tea at 10 A.M. Caught 14 big trout there in few minutes. Then river opened into long, narrow lakes, and the going was bully. It turned west (or we did—it came from west) and went into the mountains, and we fairly shouted for joy. George saw caribou. Turned out to be geese. Chased ahead of them on bank. Shot old goose as she lay low in water, swimming and hiding. Gander took to woods. Broke old one's wings and took off leg. Then missed four shots. George took after young and killed one with pistol. Came and helped get wounded goose. Great chase. Trout (pounders) jumping like greedy hogs to fly. Took about 50 while boys were making two short portages in P.M. Ate boiled caribou, loaf of bread for breakfast. Ribs roasted on fire for lunch; 4 P.M. meal of trout and tea. Two lunches, no sugar—not bad. Bread (small loaf), coffee, sugar, goose, trout, supper. Big feed in celebration geese and good water. Bed at 11. At end of today's course turned to right into wrong channel, into little narrow lake, ½ mile long—prettiest I ever saw. Big barren bluff rises from water on north. Barren mountains a few miles to west. Ridge of green to west. Sun setting in faces to contrast and darken. Two loons laughing. Two seals, small, swimming in lake; one seemed afraid and dived; other, more bold, looked at us. Hoped to kill it to settle question of species, but did not get close enough. Good water ahead. Hope we are on the road to Michikamau.

Wednesday, August 19th.—Noon 53°-50'. Bright, clear, in A.M. S.E. wind brought clouds. Began to rain as we went to bed. Spent whole day river hunting—paddling from arm to arm of the lakes. George and I climbed high, barren ridge. Red berries and a few blue berries. Flock ptarmigan ("rockers"). I shot 3 with pistol; one old, two young, but could fly. Saw more mountains on all sides. Many lakes to east. Failure to find river very depressing to us all. Seems to end in this chain of lakes. Will retrace our way to last rapid, to be sure, and failing to find stream, will start west up a creek valley, on a long portage to Michikamau. Boys ready for it. I fear it will make us late, but see no other way. Glad Wallace and George are game. A quitter in the crowd would be fierce now.

Thursday, August 20th.—Rain last night. Cloudy in A.M. Rain P.M. and night. Wind south. Stopped to mend moccasins and give caribou a bit more drying before we start to cross mountains. Looked ahead and saw two more lakes. May be good deal of lake to help us. Mended moccasins of raw caribou skin. While George got lunch I took 16 trout, fin for bait. In P.M. Wallace and I took canoe and went back over course to last rapid, exploring to see that we had not missed river. Sure now we have not. So it's cross mountains or bust. Michikamau or *Bust.* Wallace and I came upon two old loons and two young. Old tried to call us from young; latter dived like fish. Caught one. Let it go again. We caught 81 trout at last rapid in

about an hour. Mostly half pounders; 15, about pounders, hung up to smoke. Big feed for supper. Rest for to-morrow. Rained good deal. Sat under drying stage with a little fire—tarpaulin over us—and had big supper—fried trout, trout roe, loaf of bread, coffee. Last of coffee—hate to see it go. For noon lunch, jerked venison, and tea without sugar. Little sugar left. A bit in morning and evening cups.

Friday, August 21st.—Rain all day. Wind changed to north—colder.

Portaged to little lake west of camp. Found wigwams at each end of portage. Looks like old Montagnais trail. Then more lakes and short portages. Made four miles very easily, then after a pot of tea and big trout feed, portaged one mile west to another little lake, just over height of land. Our stream tumbles off the mountain, and does not come from this last-named lake at all. Little 4 ft. ridge turns it. Went into camp very early, chilled through.

Saturday, August 22d.—Portaged across height of land. Delighted to find on end of lake westward many Indian signs. Believe this enters S.E. bay of Michikamau, or a lake connected with it. Rained hard by spells. West wind. Camped on island early in P.M. after a very short march, to repair punctured canoe, and to wait for head-wind to fall. Caribou meat roasted at noon. Two loaves of bread, dried apples and tea —no meat or fish—supper.

Sunday, August 23d.—Wind west. Rain and clear by spells. Drank last of chocolate—two pots—for breakfast. Dried blankets in a sunny spell, and about 10 A.M. started. Coming to point round which we expected to get view of lake ahead "like goin' into a room where there is a Christmas tree," said George. Narrow channel around point 2½ miles from E. end. Thence we saw a long stretch of lake running west. Believe it Michikamau's S.E. bay sure. Mighty glad. Ate boiled dried caribou, pea-soup, tea. Dried caribou hurts our teeth badly. Went west 2½ miles and climbed barren hill on north side of lake. Ate blue berries, baked apple berries and moss berries. Saw on north water in big and little masses, also on N.W. many islands of drift, rocky and spruce-clad. One long stretch of lake like a river. Runs east and west. About 2 miles north. Wonder if it is Low's N.W. River. Went west on our lake three miles. Caught a fish like pike, with big, square head, 3½ lbs. Found our lake ends—stream falling in from another lake, west. Came back 2 miles to outlet into waters north. Camped. All feel bully. On Michikamau waters, sure.

Monday, August 24th.—Rain, north wind, cold. In camp all day. Bad head-wind. George and I scouted. Fish net rotten. Threw it away. Too bad—dangerous, too. Cold weather and fish not biting. All restless at inactivity but George. He calm and philosophical, cheerful and hopeful always. Wallace and I very hungry for breads and sweets. Half our last ½ cocoa for supper. Boys nearly out of tobacco. Told them to use what I brought for trade. Sugar almost gone. Big feed berries on mountain. No satisfaction.

Tuesday, August 25th.—Cold, northeast wind. Rain.

Made start. Nasty portage into Northwest River(?). Wallace turned round and started to carry his pack back. Wind fair part of time. Part of time dangerously heavy. Landed on point running out from north shore. Wigwam poles. Have diarrhœa. All chilled. Not sure of way ahead, but not worried. Camped at 5 P.M. Nice camp in clump balsam. Not craving bread so much. Idleness and a chance to think make us hungrier. Flies about gone. Proverb: On a wet day, build a big fire.

Wednesday, August 26th.—Temperature at 5 A.M. 40°. Bright and clear, save for one shower in P.M.

Started happy. Shot goose with pistol, after long chase. Goose would dive repeatedly. Shot several times at rather long range. Paddled 20 to 25 miles on big lake running east and west. No outlet west. Came back blue and discouraged. Passed our camp of last night to climb a mountain on northeast side. Caught very pretty 2 lb. pike, trolling. Wallace and I got supper. George went to climb mountain. Had found river this side (west) of mountain, running into this lake from northwest. What is it? Low's Northwest River? Can't see what else. Glad again. Very hopeful. Sick and very weak. Diarrhœa. Pea-meal and venison and goose-liquor. Better. Bright northern lights.

Thursday, August 27th.—Bright and lightly clouded by spells. No rain.

Northwest River panned out only a little stream. N. G. Guess we must portage. Desperate. Late in season and still no way to Michikamau. One more try for inlet, and then a long, nasty portage northwest for the big lake. See little hope now of getting out before winter. Must live off country and take big chances. Camping near where we camped last night. Going up Northwest River(?) and hunting outlets some more took our time. Ran across geese this A.M. I went ashore and George and Wallace chased them close by. Shot leader with rifle, then two young ones head close in shore. I killed one with pistol and two others started to flop away on top of water. Missed one with pistol and killed other. Three geese. At mouth of supposed Northwest River found a fall and rapid. Wallace and I caught about 80 very fine trout. Average ½ lb., largest 1½ lb. None bit in deep pool where stream falls into lake, this made me suspect pike. Put small trout on bait outfit and saw cork go under. Hooked fine pike—about 6 lbs. When ready to land Wallace shot it with pistol. Above falls, lake, and above that, another. Then stream fizzled out and we turned back. While exploring a bay to northwest we landed to climb ridge. George found three partridges. I shot one, wounded another—pistol. Camp to-night cheerful but desperate. All firm for progress to Michikamau. All willing to try a return in winter. Discussed it to-night from all sides. Must get a good place for fish and caribou and then freeze up—make snowshoes and moccasins and toboggans and go. Late home and they will worry. Goose giblets and a pike for breakfast. Fried trout dinner. Planked pike and boiled goose, night. Getting so we can drink tea sugarless, and like it. Miss sugar, though. Two times we want good grub—when we are progressing and happy, and when we are dragging along, lost and blue. My moccasins are all but gone. Toes out of both. Walking on right sock to-day. George and I scraped hair and maggots from deer skin, still good. Hope to get moccasins out of it.

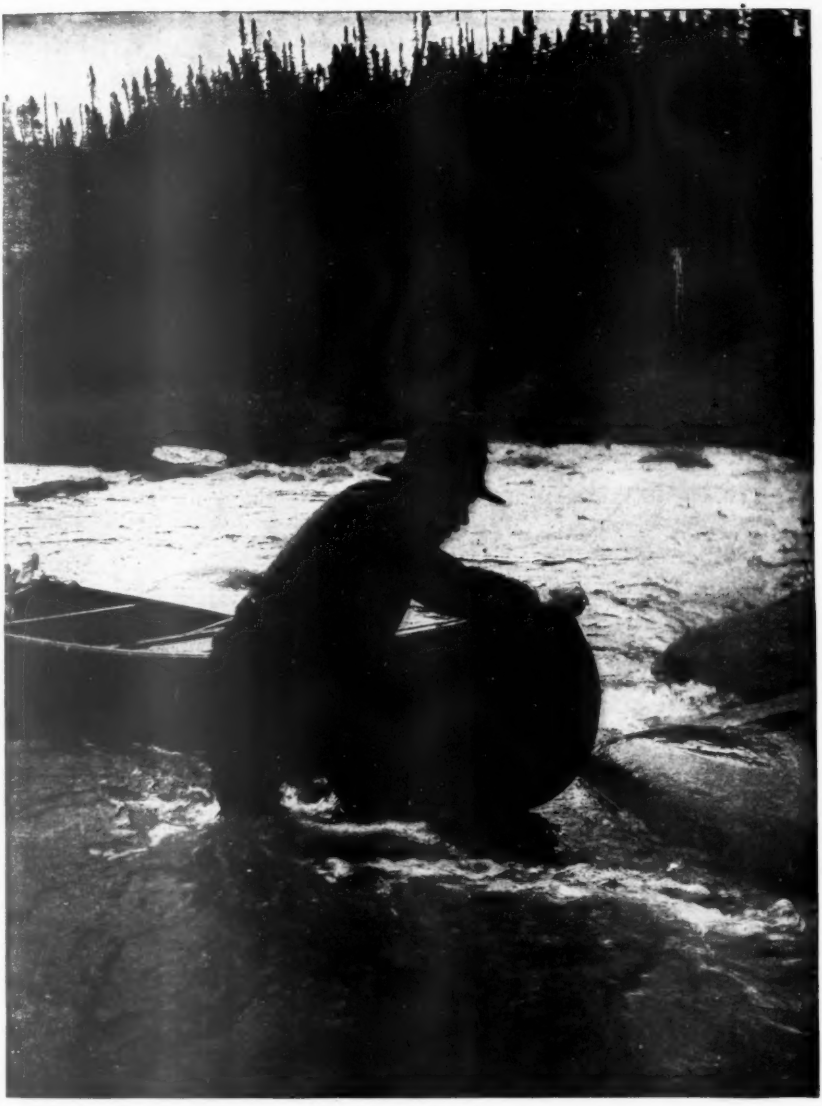
Friday, August 28th.—6 A.M. 56°. Back to Northwest end of lake, where bay runs north. Portaged to small, shoal lakes and camped on north side, ready to start portage in A.M. Fixed moccasins in preparation for long portage. Made observation of sun and moon to-night, hoping to get longitude. All very tired, but feel better now. Fish for breakfast. Boiled trout, lunch. Berries with 'em. Writing by camp fire. Goose for supper. No bread to-day. No sugar. Don't mind latter much, but hungry for bread. Good weather. Shower or two.

Saturday, August 29th.—6 A.M. 38°. Am writing a starter here before beginning our march north. Wallace and George at breakfast now. I'm not—sick of goose, and don't want it. Ate my third of a loaf of bread—lumpy—without grease, and soggy, but like Huyler's bon-bons to our hungry palates. Dreamed of being home last night, and hated to wake. Jumped up at first light—called boys and built fire, and put on kettles. We must be moving with more ginger. It is a nasty feeling to see the days slipping by and to note the sun's lower declination, and still not know our way. Outlet hunting is hell on nerves, temper and equanimity. You paddle miles and miles, into bay after bay, bay after bay, with maybe no result till you are hopeless. Ugh! This is a great relief to be about to start north through the woods—fairly high ground to start with—on a hunt for Michikamau. Hope we will not have swamps. Lakes will probably stop us, and make us bring up the canoe. If they do not we will try to go on to some barren hills about 10 miles straight north, hoping there to see Low's Northwest River lake expansions. If we do not we must go northwest till we find the big lake or Low's Northwest River. Hope there will not be many swamps to wade. Are taking a tarpaulin and two blankets to make sort of camp in case we have to stay out.

Later, 7 P.M. Writing by camp fire.

Plan outlined above did not work. Reason, lakes. So, to-night, after a day's work, the whole camp has moved three miles. Not enough. Must get more snap into our game—too much scouting—not enough backache. Grub low—dried venison three times a day—bread—just a bit—twice. Tea plenty. No sugar. Don't mind lack of sugar as we did. Still long for it and bread, but not so desperately.

George made big fire to-night—couch of boughs by it. We drank venison broth, ate tough boiled venison, then drank tea



Tracking up the Susan River.

with our piece of bread. Good evening and we are happy, despite the fact that grub is short and we don't know our way, and all that.

Sunday, August 30th.—Beautiful clear Sunday—but no Sunday rest for us. I jumped up early, called George and built fire. Started at 5.54 A.M. portaging from little lake to little lake, north and west, to where we know Michikamau must lie—somewhere. For two days have heard geese flying—thought our goose chases over—but to-day five walked down bank into water ahead of canoe on a small lake.

Wounded two at one shot with rifle. Two old ones flew. Left wounded to chase third young one. Shot and killed it with pistol. Could not find wounded. Made three miles before dinner. Good. In P.M. about 1¼ miles more. Then reached range of semi-barren ridges, running east and west, and seeming to reach to barren mountains north. George and I climbed first ridge from a little lake, with blue-green ocean-colored water. Heard stream ahead. Little river running through ponds. George went back for outfit and Wallace. I took emergency outfit and a tamarack pole and caught about 20 trout, mostly over a foot long—two smallish, 10-inch, on fly—rest with fins. Broke all my emergency hooks and flies. Yanked 'em out. Did not bite ravenously, but slowly and with dignity, as become King fishes—mostly in ponds and not much right in stream. Very, very weak to-night from hard work and diarrhœa. Can hardly drag. Shall stop here a day or two to dry fish and explore. Need grub and want to see our way before we carry outfit farther across these awful, heartless ridges. Drank a cup of tea before supper. Taken at once with severe vomiting, which passed away soon. Ate my piece of bread and roast trout, and a bit of goose, for supper. We need grease, are clear out of it. Must get caribou—not many signs of them hereabouts.

These are trying days. We are not quite up to normal strength, I think. Too much routine of diet—lack grease, sugar and grain foods. The feeling of not knowing where we are or how to get out, adds to our weakness. Still, we are all cheerful and hopeful, and without fear. Glad, all of us, to be here. How we will appreciate home and grub when we get out—coffee, chocolate, bread, pie, fried cakes, puddings; these are what Wallace and I talk about in our moments of relaxation. We talk of good dinners we have had, dwelling on minutest details. My luxury is sleep. I crawl into blankets while the boys smoke their evening pipe.

Monday, August 31st.—Ice in cups this morning. Thermometer out of order. Latitude 53°-57′. I hate to see August end with us so far from the George River—or so perplexed as to the road. We are in camp now, on the stream which we reached last night. I am writing and figuring now in the early morning. The whole character of our country changes here. Ridges and hills extending into mountains on the north. Must know what lies there before we proceed. George will scout. Wallace and I will dry fish. If George does not find something hopeful to the north, we will scout west for Michikamau. Then I think we can strike west and get much help from long, narrow lakes between these parallel east and west ridges. We surely need to get there. Moccasins out again. All of us patched with caribou skin. They give out entirely in two days or less.

Observation to-day 53°-57′. So we are safely north and may work straight west for the Big Lake. Nasty ridge in the way. Very, very weak to-day—results of diarrhœa, nervous wear and hard work, I think. While George was scouting I lay in tent awhile, too weak to fish even. Fish not biting, though. Oh, but I'll be happy to see Michikamau. George returned late. Climbed mountains to north. Reports fair line of travel to northwest, long lakes and tolerable portages. Will go that way, I think. Wallace got a few trout. George killed two partridges with my pistol.

Tuesday, September 1st.—West wind. Fair, warm. Very weak to-day. Our stuff so light now we can take all but canoe at one trip over portage. Have just crossed portage from lake by yesterday's camp to other lakelet northwest. Boys gone back for canoe. I sit here and write. Very rough portaging here, all rocks and knolls. Little clear lakes between. Have to put canoe into water every 40 rods or so. Shot a plover with pistol to cook with George's partridges.

Later. Made about 4½ miles. Caught about 35 trout at edge of lake where stream empties.

Wednesday, September 2d.—West wind. Fixed moccasins in A.M., and started portage. Camped in swamp.

Thursday, September 3d.—Rain all day, by spells. Wind west. Got up in rain, hating to leave blankets. Portaged and paddled west 4½ miles. Wallace turned round again and carried pack back to starting point. George and I carried canoe. At breakfast bread and tea and venison. I took no tea. Am trying now just venison and fish broth. May agree with me better than tea. Don't miss sugar much,

any more, though I do plan little sweet feeds when I am out. Very nasty work in rain. Am well again and strong. Worked well. Sky cleared in evening. Saw all day big spruce trees. Country here not burned, I think. Caught about 14 fish to-night. Biggest trout I ever saw. In shallow pool in stream. Sluggish in extreme. Spawning, I think. No bread for supper. Bully mess boiled trout and a few trout guts. Stirred two spoonfuls of flour in liquor and drank the resulting soup. Big moon, stars bright. Seat of boughs by camp fire. Grub good enough though not various. Feel fine. Taste for this sort of thing coming back. Have been thinking to-day of some childhood experience I want again—country fair—cherry tree.

Friday, September 4th.—Rain. West wind. Portaged west 1½ miles, with two little lakes to help. Rain all time. Stopped to let George scout best way to big lake ahead. Thinks it is three miles away. Hope it leads to Michikamau. George and Wallace mending moccasins. Fish boiled breakfast; two spoonfuls of flour stirred in liquor, good. Venison and little flour in liquor other meals. This flour scheme seems to lessen our craving for bread and will make flour last. No bread. Ate next to last mess of dried apples to-night. Had them boiled very thin and ate and drank them from tea cups. Pint each. Bully. George reports big water about 3 miles ahead. Hope Low's Northwest River lake expansions. Cannot be far now from Michikamau.

Saturday, September 5th.—Rain by spells. West wind. Cold. Awoke in rain. Last three nights have been clear as crystal—beautiful moon—then rain in morning. Very disappointing. Waited a little while about getting up—hoping rain would stop. Slackened and we started. Poor day's work. Portaged about 2½ miles west. Came out on barrens and ate lot of blueberries. Saw big waters to west—big blue hill—blue sky line where we hope Michikamau lies hidden. Pint berries raw for supper. Otherwise venison and broth, thickened with three spoonfuls of flour, each meal. This satisfies, however, and we like it. Looks milky and pasty, but fills, and tastes well. We are happy when we sit down to a pot of it hot, and are sorry when it is finished. Talked over situation on boughs by camp fire to-night. Cold nights now and nasty cold days, packing in wind and showers—but am not dressing up much, and must get ready for colder times later on. Don't suffer much though. Wallace and I talked long by camp fire after George had turned in, about home and restaurants and grub.

Sunday, September 6th.—Temperature at 5 A.M. 38°—first snow came, mixed with nasty, cold rain. Rain—cold, nasty raw west wind. Worked in it most of day, portaging, 2½ miles northwest. Tried carrying all stuff at one trip. Grub low. Big water ahead. No fish. All hungry—just venison stewed, with a bit of flour, 3 spoonfuls (table) to a pot, regular allowance. Little more flour to-day as Sunday treat—but also a little less venison. Crossed semi-barren ridges and plain and entered heavy spruce bush (small trees) alternating with swamps that make one wade and flounder. My trousers hanging in strips and tatters. My moccasins showing sock at most every angle. Not much worried about grub—think we will find fish soon. Believe this big water will lead to Michikamau. Almost a desperate hope. If it does not, and we find no water route, I scarcely see how we can reach the caribou grounds in time to see the crossing and meet the Nascaupees. Without that I'm doubtful of the success of this trip and failure makes me shudder. Besides, it is liable to make us all very hungry. We must push on harder—that's all—and get there somehow.

Monday, September 7th.—Temperature at 5 A.M. 48°. Northwest wind—light. Rain by showers. On portage crossed worst swamp of trip in to my knees and fell down with heavy pack on my back. Floundered out in nasty shape. Found small stream flowing northwest toward our water. I caught about 30 trout—not big—while Wallace and George brought up outfit and canoe by stream. Very slow work. All very hungry in P.M. Stopped for pot of soup. Found it getting dark and stopped to camp. Last meal of venison in bag. Must get fish. Ate half the trout to-night, boiled and thickened with flour. Drank last bit of cocoa. No sugar. Boys not scared. No talk of quitting. Don't just see where we are coming out.

Tuesday, September 8th.—Cold, raw N.W. wind—no rain. Partly clear. Observation

noon, Latitude 54°-1′-21″. Aired and dried blankets. Followed stream down to very shoal bay of our big water, which, like the will-of-wisp, or, as Wallace puts it, the wisp of hay before the donkey's nose, has led us on. Only 10 trout, mostly small. Weather too raw. Very depressing to have it so when meat is out. Ate last bit of caribou stewed with a young ptarmigan George shot, some flour thickening. Moccasins in tatters. Socks and duffel hang out at every angle and catch on every bush. Pants in rags from knees down—shreds. Could trade footwear and pants with raggedest tramp I ever saw and be better off. It is depressing. So is grub lack. Hard to keep up courage when hungry. But we do it. George and Wallace brave as lions. On to caribou grounds is the watchword. Gave up trouting and started northwest on our big lake. Stopped to climb mountain. Ate some cranberries. Saw a few old caribou tracks. Big mountain to west of us. Islands or something between. Many low, flat, wooded.

Wednesday, September 9th.—BIG DAY. Warm, clear. Temperature 5 A.M. 29°. Ice in cups.

Slept without sweater or socks last night—cold, but slept well. Beautiful, cold, crisp morning. Up at first dawn. Inspiring, this good weather. No fish or game ahead. George boiled a little bacon and rice together and a little flour—made sort of porridge for breakfast. Very, very good. Went to big hill mentioned yesterday. George and I walked about 4 miles and back, getting to its top through spruce burnings Awful walking. Very tired when about to top. Wondering about next meal and thinness of soup mostly to blame, I guess. Then things began to get good. First we ran across a flock of 10 ptarmigan. They were in the burned-over, semi-barren of the hill top. They seemed to lack entirely the instinct to preserve themselves by flying. Only ran ahead, squatting in apparent terror every few feet. We followed with our pistols. I killed eight and George one. My last was the old bird, which for a time kept away from us, running harder than the rest, trying to hide among the Arctic shrubs. George says they are always tame on a calm day. Their wings are white, but the rest is summer's garb. "Not rockers, but the real kind," says George. Then we went on across the mountain top and looked west. There was MICHIKAMAU, and that's what made it a Big Day. A series of lake expansions runs east from it. We can see them among flat, drift islands, cedar-covered, and the ridge south and a hill and the high lands north, and apparently a little river (?) coming from the north and pouring in to the lake expansion some miles east of Michikamau. There is one main channel running east and south (in this expansion). It is north of the waters we are now in and we can see no connection. However, it looks as though there might be one about 5 miles east of our big hill, behind some barren ridges about 50 feet high. So we are making for them, to see what we can find. If no connection we must portage, but we will not mind a little portage now with Michikamau waters just over it. Westward from our hill are dozens of little lakes and a good deal of low burned land—southeast more lakes—must be an easy portage from the lakes on which we were muddled two weeks ago. That's where we missed it—in not finding that portage.

A little rabbit crept before us on the mountain. Both shot and hit. So rabbit and ptarmigan were ahead for three meals. We cooked 3 ptarmigan on our glad but tired arrival at canoe. They were bully. We roasted the guts and ate them. Good too. Did not wash them. Stripped out the blackest, wound 'em round a stick and held 'em in fire till cooked. Wallace had picked big pan of berries (blueberries). To-night we feasted before a big fire under a beautiful moon. Two 2-lb. *nomaycush* which I caught in evening, trolling, boiled with a touch of flour—heads and guts in stew—then Wallace's blue berries stewed and a bit of flour to thicken—thought it would be like a pudding. Was pretty good and did suggest pudding a little; would have been real thing if it had had sugar and a little more flour. Light southwest breeze.

Thursday, September 10th.—Wind west—cloudy. Temperature 5 A. M. 46°. Cut legs from old drawers and pulled them over pants as leggins. Went east, looking for opening into Northwest River. Think we saw it from ridge to northeast. Came S. W. believing we saw also opening into Michikamau's bay which runs out of

Preparing a mess of the grouse that helped out the failing food supply.

lake on S. E. side. Wind delayed and we only got to foot of mountain from which we expect to see it. Camped. Rain commenced. While scouting I shot a large spruce partridge with pistol. Needed it. Ptarmigan for breakfast and lunch. No fish on troll. One ptarmigan and spruce partridge stewed for supper with bit of rice and flour. Lack of grub depressing and exhilarating by turns; former to be hungry; latter to rely on self and country for grub. Learning what grub to take and leave. Next hard trip, flour, rice, pea-meal, oatmeal, fair amount of bacon, tea. Little or no sugar, chocolate and milk—no coffee, no apples.

Friday, September 11th.—Raining in morning. Wind southwest. Temperature 49°. Ate last meal of mother's sweet dried apples, stewed over night and thickened with a little flour, for breakfast. Two partridge guts and a small trout made rest of meal. Have eaten a good many apples from that same tree in northeastern corner of yard at home. Did not think in those days would have last of them here, as I lay for hours under Summer Queen trees next to this same sweet apple tree, with map of Canada, dreaming of a trip into the unexplored. No dinner in sight. We have left about 2 lbs. rice, 7 or 8 lbs. flour, 3 or 4 lbs. bacon, and 6 or 7 lbs. of tea. We have also 20 lbs. of pea-meal—mostly erbswurst—a little of Symingtons. This latter is emergency grub, not to be used till we have frozen up for the winter march. It makes one feel desolate to have no dinner ahead. We *can* draw on our flour and bacon and rice, but we *must* not. We are on the verge of success, apparently; in sight of Michikamau, from which it ought not be far or long to the caribou grounds and the Nascaupees. Yet we are sick at heart at this long delay, the season's lateness, the hunger and our barefoot condition. Yet no one hints of turning back. We could do so and catch fish and eat our meal for we know the way to within easy walking distance of Grand Lake. But the boys are game. If we only had a fish net we would be O.K. My plan is to get a few fish, if possible; push on at once to Michikamau some how. Get to the George River, and find the Nascaupees. Then if the caribou migration is not over we will kiil some of the animals, dry them up, and get as far back as possible before freezing up and leaving the canoe. Then, unless we can get someone to show us to the St. Lawrence, we will probably go to Northwest River Post, get dogs and provisions, and snow-shoe southwest to Notisquang, or some such point. If we don't get to the caribou grounds in time—well, we'll have to try to get some fish ahead, or use our pea-meal in a dash for the George River H. B. C. Post.

After breakfast George and I went in rain to climb mountain. No water into the S. W. bay of big Lake as we hoped. Trolling back I caught one small namaycush. Then we all started to hunt for a rapid we heard on the S. side of this lake. Caught one 2½-lb. namaycush. Found rapid. Good sized stream falling in from south. Big hopes, but too shoal and rapid—no pools. Only one mess of trout. Very much disappointed. While Wallace and I fished George has gone to troll. When he gets back we will go to look for inlet into Low's "Northwest River;" not finding that, we will start on a portage for it in the morning.

Later. By camp fire. Weather has cleared—all bright and starry. Caught a 7-lb. namaycush, and so we eat to-night.

Saturday, September 12th.—Temperature 38°. High N. W. wind. Clouds and sky by spells—dashes of rain and snow. We camped on a little island not far from the northeast mainland, where we hope the inlet is, just at dusk. Ate big namaycush and were ready to push on early this A.M. Two meals of trout ahead. Awoke this A.M. to find awful gale stirring the lake to fury. No leaving. Wallace and I stayed in tent mending. I made pair of moccasins out of a pair of seal mittens and some old sacking. Patched a pair of socks with duffel. Not comfortable, but will do. George went to canoe to get fish. "That's too bad," said he. "What?" I asked. "Somebody's taken the trout." "Who?" "Don't know; otter or carcajou, maybe." And sure enough they were gone—our day's grub. We all laughed—there was nothing else to do. So we had some thin soup—made with three thin slices of bacon in a big pot of water and just a bit of flour and rice stirred in. One felt rather hungrier after eating it, but then we did not suffer or get weak. It is very disappointing to be delayed like this, but we can only make the

The Lucky Kill of Geese.

Stopping for Noon Meal, on Grand Lake.

most of it, and wait. No game or fish on this island and no hopes of getting off till it calms. So we are cheerful, and make the most of a good rest and a chance to mend—and we need both, though perhaps we need progress more.

Sunday, September 13th.—Temperature 39°, 5 A.M. High N. W. wind in A.M. Clear, rain, sleet by spells. Heavy wind continued this A.M. Some more rice and bacon. Soup for breakfast. Read Philemon aloud and told story of it. Also 1st and 91st Psalms. Found blueberries and all ate. About one o'clock wind dropped somewhat. We started to hunt outlet into N. W. River, supposed to be N. E.

One of the Old Indian Deserted Camps.

of island. N. G. Shot at goose—missed. Hooked big namaycush. Lost it. Caught another—6 lbs. Ate it for lunch about 4 P.M. Picked gallon of cranberries. Ate a pot stewed with a little flour for supper—enough for two meals left. Not very satisfactory. Awful sour, but lots better than nothing. Sat long by camp fire.

Monday, September 14th.—Temperature 40°, 5 A.M. High N. W. wind—clear and showers by spells.

Very much disappointed to find heavy gale blowing—could not leave shore. Had breakfast of very thin soup. Then all slept till nearly noon.

Hungry all day. Cranberry pudding—stewed berries and a bit of flour—a sauce—for lunch. Wallace and I left tent about 10 and sat by camp fire. All cheerful but hungry. Wallace and I made a list of restaurants we are going to when we hit New York. Our tastes are decidedly plebian. I would like to enter a mission restaurant on the Bowery and eat beans and bread at 2 cents a plate. I could revel in Haim's 2-cent coffee, 3-cent pie and cheap buns and coffee-cake. I would like now, best of all, big slices of boiled pork, bread (bannocks preferred) and sorghum, or New Orleans molasses. Would roll the bread in it and eat it down as a delicacy, as I've seen "lumber Jacks" do. George tells of his camp cooking for miners and surveyors and we delight to listen. Wallace tells what he has cooked now and again, and I add my poor store of culinary knowledge.

I have learned a lesson in outfitting on this trip. It is this—on a hard trip take only the essentials—leave the comforts out. When you are hungry enough you will not mind lack of sugar. Boiled fish will satisfy. So will rice and pork. Better a little flour or other grain with fish or stew. It satisfies the bread craving. Never mind lard—don't shorten bread. I'd take now: First, flour—a lot; second, pea-meal—a lot; a lot of oatmeal and rice; a few beans, maybe; tea, sure; a good wad of bacon or fat pork—preferably the latter; baking powder; some salt. Never mind sugar or coffee or chocolate—or take a little to taper off with at the start—just a little. Then use the whole lot conservatively. Boil bacon and rice and stir in flour. Same with oatmeal. Use oatmeal, rice and flour with partridge, fish, etc. Go light on bread. Flour goes farther in soup. But I'm not aching for more trips like this just now. Heretofore I have reveled in strenuous trips, trying to make them the real thing—getting down to the essentials. Now I've had a good taste of essentials, I want pleasant, easy trips.

George and I have decided that we must not start this way home before freezing-up time. Might get caught again by bad winds. Better freeze on the George River with the Indians, save grub—if we get any—and then snowshoe clear out.

Later, by camp fire.

Hard to keep off depression to-night. Wind continues and all hungry.

Tuesday, September 15th.—Temperature 31°, 5 A.M. West wind, spits of sleet and fair. Wind continued hard all day. Could not leave shore. I lay awake all last night, thinking over the situation. George is worried and talks of Indians who starve. Tries to be cheerful, but finds it hard. Here we are, wind-bound, long way from Michikamau. No hopes of wind abating. The caribou migration is due to begin. Yet we can't start and are at least two weeks from their grounds, with no grub and no prospect of good weather. Our grub is 18 pounds pea-meal—to be held for emergency—and 2 pounds flour, 1 pint rice, 3 pounds bacon. To go on is certain failure to reach the caribou killing, and probable starvation. If we turn back we must stop and get grub, then cross our long portage, then hunt more grub and finally freeze up preparatory to a sled dash for Northwest River. That will make us late for boat. But we can snowshoe to the St. Lawrence. I don't see anything better to do. I asked Wallace. He opposed—then said it was best. I said to George—would you rather go on or turn back? "I came to go with you and I want to do what you do." When I said we will turn back, he was very greatly pleased. Now my job is to get the party back to Northwest River, getting grub as we go. We will take the back track to some good fishing grounds, catch fish, try to kill a caribou, and wait for freeze. We can't take the canoe down the Nascaupee—hence the need of freezing.

Staid in camp all day. Could not launch canoe. No place to fish or hunt. Feel better, now that the decision is made. Ate very thin rice and bacon soup and drank tea. Long chat with Wallace. Feeling good in spite of short grub. We are talking of plans for our home going, and are happy despite impending hunger.

Wednesday, September 16th.—Temperature 29°, 6 A.M. Wind N. W., shifting to N. E. Little rain. Moved to rapid on south shore, where there is some trout fishing, and hard place to be wind bound. Must fish a few

days and get grub ahead for our long portage back to Namaycush Lake. Ate last bit of bacon at noon—cut in three bits and boiled in rice and a little flour. Boys trolled in P.M. I made camp and fished brook. Too cold. They lost two good namaycush. I took two 10-inch trout. of erbswurst. Good. Wallace and I each had half a bird. No lunch. Trolled faithfully. Lost one big namaycush by hook breaking—another, 5 pounder, through trying to shoot. Then took a two pounder and one 6 pounder. Lifted latter out on a gaff I made this A.M. of a gimlet and a bent

Mending Moccasins.

Boiled these into a mush and put last handful of rice and a little flour into pot with them. Good soup, made us feel stronger.

Thursday, September 17th.—Temperature 33°, 6 A.M. Rained all last night and all this P.M. For breakfast a whiskey Jack stewed with flour and about two spoonfuls stick. Cut this fish in three parts to make three meals. Ate one for supper and followed it with a cup each of thin cranberry stew—this gives us two little meals ahead and the smaller fish to smoke for the portage. If we can get ahead enough fish to take us across this portage, our pea-meal

Making Fire for the Noon-day Meal on the Portage.

and what fish we can get on river, will see us to Post. Hoping weather will improve so we can make a good haul. Disheartening in extreme to be working all the time in rain and wind and cold. I made a map this A.M. of our long portage—about 30 miles—will require about 7 days. All a little weak from thin food; too much thinness of soup. But all perfectly cheerful and in good spirits. Camp fire is the luxury now. Wallace and I hate to leave it. Night in tent with our thin blankets, always more or less cold shivers and unpleasantness. At the camp fire we talk of home and what we'll do, and dinners. Wallace and I talk over the same old things again and again and again, and never tire of them. I patched tent to-day and put outside spring to hold it shut, trying to get more warmth in it. It has been a bully tent and is yet.

Wallace and I stretched tarpaulin by fire and sat long beneath it, chatting. Wallace is a great comfort these evenings. There has been no friction on this trip whatever. I think I'll get a bully story out of this trip despite our failure to find Nascaupees. I'll get more in freezing up, more in Northwest River people and more in the winter journey to God's country.

Friday, September 18th.—Temperature 38°, 6 A.M. S. E. wind turning to N. W. gale about noon. Raw by spells and snow. Caught three namaycush in A.M. Then wind bound by fierce N. W. gale at camp. Wallace caught 2 ½-lb. trout. I caught one ¾-lb. Namaycush heads and guts and my trout for supper, boiled with last of flour. Hungry and all a bit weak, but all cheerful.

Very depressing, this getting wind bound so often just when we are trying to get fish ahead for our long portage toward home.

Saturday, September 19th.—Rain and snow last night. Temperature 32°. Gale from N. W. all day. Wind bound in camp all day. Lay in tent most of time. Spits of snow. No breakfast. Bit of fish and its liquor for lunch. Same with a dash of pea-meal at night. Oh, to be away from this lake and its gales and to be started home!

Last night we quit rolling in blankets and made bed to keep warm. All three crawled in. Warmer than other way. Quite comfortable all night.

Sunday, September 20th.—Temperature 6 A.M. 29°. Morning bright and clear. Light N. W. wind. Showers in P.M. Squally. Started trolling along our shore west of camp by the rapid. Hooked and lost big namaycush. Caught one 4-pounder. Ate it for lunch. Wind drove us to shelter. Ate berries—cranberries—on ridge north of lake. Wallace very weak. I, too, but did not say so. Wallace said sick at stomach; trouble, though, is lack of grub. We've been eating too thin soup. To-night we are starting for Northwest River Post. We are sick of this windy lake, which keeps tying us up day after day. We have just 16 lbs. pea-meal and one mess (very small) of dried fish. I have made map of our long portage which lies between us and Disappointment Lakes. I count we can get over it in seven days' hard work. Then it is only two days to good fishing on our big river. We will have *some* fishing on the way over. When we reach the big river we can, I think, nearly live on the fish we get. From there, too, there are more signs of caribou. About four days more and we ought to reach a remnant of flour which we threw away. It was wet and lumpy, but we will welcome it now. It (if is usable) will see us to the head of Grand Lake, where Skipper Blake has a cache, I think, in a winter hunting shanty. It promises to be a hungry trip—but it's a man's game! Now that we are starting home I am content with the trip and material. We've done all we could. Our minds turn to home even more and we are so anxious to be back. So hungry to see all the old friends. I'd like to go and see all my relatives and especially those in the country. Canada and Michigan call me specially. George told us to-day of another Indian mixture I want to try. It is flour and sugar and salt and water stirred into a batter—poured into boiling grease in frying pan and cooked—then eaten with spoon. Another is plum pudding dough fried like doughnut in boiling grease—same cut thin and fried in pan. Pretty greasy, I guess, for home, but good in the woods.

Monday, September 21st.—Temperature 6 A.M. 40°. W. wind. Rained all last night. Warm this A.M. Left camp and went to inlet, where we entered lake. Forgot axes. Wallace and George went back for them. I fished stream—5 small trout. Moved up to last camp above lake. Camped there. Like home and cheers us up. All pretty weak. Threw away logarithm book,

some tea. Ate four thin meals of soup. I shot a small duck with my rifle. Just touched tip of its bill and did not tear it up. Small but went fine in soup to-night. A depressing day in many ways. Keep uncertain as to grub and our diet is very thin. More caribou signs. Think they are coming out of barrens—that's good. Went to tent early, so rainy outside. All cheerful.

Tuesday, September 22d.—Temperature 38°. N. W. wind. Rain in morning and by spells all day. Six small trout in our pea-soup at first lunch. Then tea-sickness made me throw mine up. Hated to lose them. 1½ lb. erbswurst used to-day: ½ lb. breakfast, ¼ lb. A.M. lunch, ¼ lb. P.M. lunch, ½ lb. night dinner. All feel stronger to-day than yesterday. Tried to stalk goose in bad swamp. Missed at long range. Waded above knees in mud and water to get shot. Portaged all day, mostly through low or swampy ground. Happy to be going home. Camped to-night on second old camping ground. George and Wallace brought up last of outfit, while I made camp and got wood.

Wednesday, September 23d.—Rain by spells. W. wind. Clear in evening and cold. Portaged all day. Crossed barren ridge. Had big feed moss berries and cranberries. Wallace had apparent tea-sickness and vomited. Erbswurst same as yesterday. Feel quite weak to-night. Had carried canoe a good deal. A good deal depressed until camp fire. Then good again. Bright, crisp night. Dried clothing and got warm. Talked long by fire of home. Blankets very damp. Hard time keeping warm at night.

Thursday, September 24th.—Temperature 28°. N. E. wind. Snowing in morning. Quite cold last night but clear and crisp till toward morning, when it snowed. Blankets very damp, but by drying clothes at fire and getting good and warm we slept warm and well. Snow covered ground by noon. Disagreeable morning, but a little crisp wintriness helped it some. Plodded along through snow on a pea-soup breakfast, wondering what the outcome will be—a little. Nasty weather makes one wonder. Then came a happy event. George killed one goose, which drifted ashore, and wounded another, which sat on shore and let George end it with pistol. Never was goose more gladly received, I'll venture.

I promised George two cook-books and a dinner as a reward. He says he will take a leg of lamb, beets, sweet potatoes, honey, hot biscuit, mince pie, ginger cake, chocolate. We ate giblets boiled in pot, and drank liquor. Oh, *how* good. Then we ate the guts—stripped but not washed—boiled in tea pail. Bully. They swelled up and were quite substantial. Liquor was good, too. George gave us each a little fat and skin. We warmed it before fire and ate it half raw and found it delicious. Fierce cold rain in P.M.

Blankets wet for several days. No chance to dry. In evening heads, wings and feet of geese, boiled. Good.

Friday, September 25th.—Temperature 28°. Wind N. E. Snow squalls. Half goose, breakfast. Pea soup, thin, for dinner. Half goose, supper. Goose is bully. When done eating we burn the bones and chew them. Nasty day. Portaged to old camp on small lake and stopped. All day I have been thinking about childhood things and the country. I want to get into touch with it again.

Saturday, September 26th.—Temperature 28°. Wind N. W. Rain in early morning—cold wind—warming in late P.M. Clear at midday. Dried blankets. Traveled over old course to our "long-lake-that-looks-like-a-river." Shot a large duck's head off with rifle. Had hopes of a few fish at place where we found them spawning on our westward way, but was fearful of the cold. Left George cooking duck and went to try with Wallace's rod, not over hopeful, as water was very high and weather cold. Delighted to catch 20 very fair ones while lunch was cooking. In P.M. took 95 more. Estimated weight of catch 70 lbs. We will stay here to-morrow and fish and dry trout for journey. This is a wonderful relief. It means enough fish to put us through to our big lake, or nearly so. We had no hopes of such a catch and would have been delighted with just a meal or two. Then it means—I hope—that we will find the trout biting at other spawning places and catch enough to live on in spite of the cold weather. We are happier than for weeks before, for we believe this almost guarantees our safe return home. Rain drove us from our camp fire just after George had declared: "*Now* we'll talk about French toast, and what we'll eat

Patching the canoe.

when we get to New York." So we all crawled into blankets and did plan and plan good dinners.

Sunday, September 27th.—Warm day, partly clear, wind S. W. Ate last of goose for breakfast. Bully. George and Wallace cleaned trout in A. M. Big feed of guts and roe, roasted together in frying pan for lunch. Bully—awful good if some flour and butter were stewed in. George fixed stage and put fish to smoke. I caught about 50 more. Not biting so well, though it is a fine day. Hole fished out, I guess. Very tired; relaxation, I think. Lay in tent after fish quit and wrote diary and talked with George. Wallace hunted caribou.

Monday, September 28th.—Snow by spurts—clear by spells. Staid in fishing camp to rest and feed up. Were all weak as cats when we relaxed from the grub strain. We kept smoke going under stage and lay in tent most of day. Boiled fish for breakfast. Roast, smoked fish for other meals. Like them rather better the latter way. When we eat them boiled, no tea; just drink fish liquor. When roast, tea. All drink tea when we want it. Have plenty. Eat 6 to 9 fish per meal. Not big feed and leaves us hungry for more, but I count it gives us about a pound of fish per man, per meal; that ought to be enough. George says this weakness is what Indians complain of "when they've been hard up and then get grub, they get just as weak! Then they rest and feed up a little and get strong." "But it's just after the grub comes that they're weakest," again he said. "I guess it's because our minds are a little easier." Which, I think, is good psychology. How easy we feel now, with a few days' fish ahead! It is the first part of the journey we have enjoyed. Homeward bound, with enough grub to make it probable we shall get there. As to outfit—for a hard trip like this more men are essential. The head must have more time to think and plan—less need for continuous physical labor. Add to outfit mentioned heretofore, some pemmican, perhaps beans, and some hardtack—the last to use with pea-soup and fish-broth at the last extremity.

I want also to experiment with condensed foods and emergency supplies—maybe write an article thereon—some time.

Tuesday, September 29th.—Temperature 24°. Snow by squalls all day. Wind W. Caught 12 good trout while boys were breaking camp. Crossed long lake. Diarrhœa which attacked me yesterday came back when I started to carry canoe. Had to drop it and became very weak. Boys went on with it about 1¼ miles and came back. We camped on long lake. I huddled by fire and wrote when it was not snowing. We can catch up to our schedule if I am able to travel to-morrow, for it is only an easy march, covered in less than a day before. All talking about home——all happy to be going there.

Wednesday, September 30th.—Boys carried canoe nearly to Pike Lake, while I made camp and went back and forth three times to bring up packs. Then a happy camp—nearer home. To-night we planned in case we have a long wait in St. John, to get rooms for light housekeeping, and not go to hotel. Then we can cook what we want and need, and live high—beef bones—far caribou—cereals with real cream—rich muscle-making stews of rice—beef, etc., tomatoes, etc.

Thursday, October 1st.—Temperature 40°. Crossed this A. M. to Pike Lake. Lunch on west side—last of fish. Nothing now left but pea-meal. Crossed lake to trail on east side, hoping to get trout where I took a mess in outlet, coming up. Not a nibble; too cold, or something. Camped in lee of trees. Boys had feed of blueberries while I fished. Ate half stick of erbswurst. Good camp fire, but I rather blue and no one talkative. So hungry for home—and fish.

Friday, October 2d.—Cold W. wind. Temperature 30°. Cold—snowed a bit in evening. Took packs early in day and hurried across from Pike Lake to tamarack pole fishing place. Only two trout before noon. Ate them with pea-meal and boys went back for canoe. Only two days and easy ones, now, to our big lake. Then only two days to the river with its good fishing. This makes us feel good. It means a good piece nearer home.

George shot duck with rifle in P. M. I got three more fish—1½ lbs. each—about. Ate duck for supper.

Saturday, October 3d.—Bright, crisp morning. Temperature 21°. Snow squalls. Left tamarack pole place and portaged south over old route—crossing lakes, etc., to our camp of August 29th, on little pond.

Wet feet and cold, but not bad day. I lugged all packs, and boys canoe. Beautiful moon and clear night. All sat late by camp fire, talking and thinking of home. Pleased to have another fair march back of us—happy. George shot two ducks with Wallace's rifle. One boiled for lunch—other for supper. One fish boiled with erbswurst for breakfast.

Talked of what people are doing at home to-night.

Sunday, October 4th.—Temperature 10°. Bright, clear, cold A. M. Everything frozen in morning. Pond frozen over. Two trout left. One for breakfast, boiled with erbswurst. Portaged to lake, about ¾ mile away. Crossed it. Some ice to annoy. George borrowed Wallace's pistol, saying he saw a partridge. He killed four. Lord's with us. We need 'em bad. I'm weak and nervous. Must have vacation. Wallace notices it. Have not taken bath for two weeks—ashamed of my ribs, which stick out like skeletons. Thinking of going to Bewdley's for vacation. Want to take a lot of Hope's broken candies—or Ridley's—for presents. Feeling weak and mean to-day. Wallace read 13th Chapter of 1st Corinthians this A. M. I read 91st Psalm. Drying blankets. Ideal day. Later. Af-

Taking an Observation.

ter lunch I started to hunt trail. Two spruce partridges jumped up ahead of me. Shot both with pistol. Hit each at first shot, but had to shoot one second time. Very weak and tired this P.M. George and Wallace carried canoe while I brought up packs, one at a time. Sat at old camp—first north of big lake. Pretty happy to-night to be one day's journey nearer home.

Monday, October 5th.—Temperature 30°. Wind S. E. Snow on ground. Up late. Waited Wallace to mend moccasins. Late start. Crossed bad swamp to big lake, wading icy water. Dried feet and drank cup soup. Stopped island in P.M. to get berries. George and I each shot a partridge. Got dark. Camped. Good moss berries. All talk much of home now.

Tuesday, October 6th.—Temperature 48°. Rain and snow in A.M. George shot partridge before breakfast. Rained most of night.

Started, expecting to portage to lake first west of height of land. Got into rough sea—exciting time. Found river of considerable size with rapids emptying into that lake. Ran into it and prepared to finish in morning. George and I ran on rock—shooting rapid. Beautiful night—cold. Feel all cold.

Wednesday, October 7th.—Thermometer out of order. Heavy frost. Ran down river into lake. West to barren mountain; climbed to scout on day after entering lake W. of height of land. Stopped and fed well on our moss berries and cranberries. Took some along. Started height of land portage. Happy to be back. Very thin pea-soup breakfast. Some with berries for lunch. Weak.

Thursday, October 8th.—Thermometer N. G. Very frosty.

Finished height of land portage and came on to place where we dried caribou—second time—at head of Ptarmigan Lake. I caught four fish—small trout—while Wallace was going back for rifle which he had left at far end of small lake. Wallace came back with partridge. This delayed us and we did not reach good fishing rapid. Hope to get trout here. Did catch a few before—failed to-night. Bright, crisp day, too. George very blue in consequence. Wallace and I not worried. Pea-meal down to less than 2 lbs. No other food, save tea.

Friday, October 9th.—Reached good fishing hole at rapid where we caught so many trout on way up. Got about 60 in P.M. Glorious, crisp, fall day. Dried blankets. Fifteen trout lunch; 12 supper. Then 6 roast before bed time. Disappointing. Hoped for some to dry. Only one day's slim fish ahead—1½ lbs. pea-meal. No hopes of getting ahead fish to freeze up. Must get out to civilization. Pretty weak, all of us.

Saturday, October 10th.—From rapid about half way to camp Caribou. Boys shot rapids, while I fished. Beautiful day till about noon. Then cloudy and cold west wind. Cheerful camp fire, as always. About 20 trout; 9 boiled for supper. Same number for lunch. Much talk of grub and restaurants and our homegoing.

Sunday, October 11th.—Beautiful, clear day. Cold. Off day for grub. George shot three times at ducks and I fished at rapids. No fish—no ducks. Nine small trout breakfast, eight lunch. No supper ahead save what George hoped to find at camp Caribou. Arrived there tired and weak about an hour before sunset. George gathered bones and two hoofs—pounded part of them up. Maggots on hoofs—we did not mind. Boiled two kettlefuls of hoofs and bones. Made a good, greasy broth. We had three cupfuls each, and sat about knawing bones. Got a good deal of gristle from the bones and some tough hide and gristly stuff from hoofs. I enjoyed it and felt like a square meal. Ate long, as it was a slow, tough job. Saved the bones to boil over. Saved horns, too. They were in velvet and seem to be quite soft and greasy on inside. A good deal of skin sticking to them and head, which George will save. Trying to save, also the "*wenastica*"—digested contents of stomach—but it has been well washed out, is pretty rotten, and may be hopeless. Will try a soup of it, anyway.

Monday, October 12th.—Made about 9 miles to-day. Several bad rapids. Shot them. George and I nearly came to grief in one. My fault. Beautiful day. Fished a little, but no fish bit. Hope to leave stream to-morrow, and that makes us happy. For breakfast bones of caribou, boiled to make greasy broth—quite supply of grease in it—hoofs—two—boiled. Some gristle to these that was good. Strong, ran-

Portaging.

cid taste, but we relished it. Roasted hard parts of hoofs in fire—ate them—half rubber—half leather, but heap better than nothing. For lunch, bones with skin from velvet horns added. Latter boiled up and was very good. At night same bones boiled to make broth. Skin from head added. Part of mine I could eat boiled. Part from nose very thick and had to be roasted first. Good. Sat by camp fire long time. Very sleepy. Talked of home and friends and grub and plans.

Tuesday, October 13th.—Lightened our packs a bit, throwing away more or less useless stuff at old shack where we had a rainy night. Pot of tea at rainy Sunday camp. All very hungry and weak. Camped below rainy Sunday camp. Tried *wenastica.* Not bad. Not much taste to it.

Thinking all time of home and parents, Congers and Wurtsboro and childhood and country.

Wednesday, October 14th.—Caribou bones boiled into broth for breakfast. Then George shot at duck. Came back. "Lord surely guided that bullet," said he, reverently. He had killed a wonderfully fat duck. Oh, but it was good and greasy. Made bully lunch, boiled and good pot of broth. Left river where we entered it. Left canoe, sextant-box, artificial horizon and my fish-rod. Packs still too heavy for our strength. Little progress. Reached old camp whence we left lakes for big river. Hoped fish. No bites. Cold E. wind. Big fire. All cheerful. Just bone broth and a bit of *wenastica* for supper. Must lighten packs to limit. Count our bit of flour 22 miles from here. Here George found two old goose heads and some bones we left. Saved them for breakfast. All gnawed some charred bones. George found 3 tiny slices fried bacon in old lard can which we left—one each. How good they were. The scrapings of lard he melted for the broth pot. We have 1¼ lb. pea-meal left. No other grub but tea. We think this will take us to our bit of flour—if it is still left, and Blake has a cache, we think at head of Grand Lake about 24 miles beyond that. Hope to get out O. K. Count on berries to help us. Had some moss berries to-day.

Thursday, October 15th. — Lightened packs a good deal. Left Wallace's rifle, cartridges, rod, my cleaning rod, my sextant and 15 films and other things, cached in bushes at left side of little stream between two lakes. Wallace hated to leave rifle, and I hated to leave other stuff. Spent most of forenoon getting ready. Ate for breakfast bit of skin from old caribou head, boiled with bone broth. At lunch—on Montagnais Lake—same, but skin was that from old caribou hide which we had carried to mend moccasins. Were almost to our second camp—where we ate first goose—when I got shaky and busted, and had to stop. Wallace came back and got my pack and I walked to camp unloaded. In P.M. George shot three partridges which jumped up before us in swamp. Killed them with my pistol. Made us very happy. Ate one for supper, and oh, how good. In spite of my weakness I was happy to-night. I remember a similar happiness once just after I went to New York. I got caught in rain; had no car fare—got soaked—spent last 10 cents for rolls and crullers—then crawled into bed to get dry and eat, not knowing where next meal would come from.

Sunday, October 18th.—Alone—in camp—junction of Nascaupee and some other stream—estimated (overestimated, I hope) distance above head of Grand Lake 33 miles.

For two days past we have traveled down our old trail with light packs. We left a lot of flour—wet—about 11 miles below here; 12 miles (approximately) below that about a pound of milk powder; 4 miles below that about 4 pounds of lard. We counted on all these to help us out in our effort to reach the head of Grand Lake, where we hoped to find Skipper Tom Blake's trapping camp and cache. On Thursday, as stated, I busted. Friday and Saturday it was the same. I saw it was probably hopeless for me to try to go further with the boys, so we counseled, last night, and decided they should take merely half a blanket each, socks, etc., some tea, tea pail, cups, and the pistols, and go on. They will try to reach the flour to-morrow. Then Wallace will bring a little and come back to me. George will go on to the milk and lard and to Skipper Blake, if he can, and send or lead help to us. I want to say here that they are two of the very best, bravest and grandest men I ever knew, and if I die it will not be because they did not put forth

Making up the Packs, for the Return Trip.

their best efforts. Our past two days have been trying ones. I have not written my diary because so very weak. Day before yesterday we caught sight of a caribou, but it was on our lea, and winding us, got away before a shot could be fired. Yesterday at an old camp we found the end we had cut from a flour bag. It had a bit of flour sticking to it. We boiled it with our old caribou bones and it thickened the broth a little. We also found a can of mustard we had thrown away. I sat and held it in my hand a long time, thinking how it came from Congers and our home, and what a happy home it was. Then I took a bite of it, and it was very good. We mixed some in our bone soup and it seemed to stimulate us. We had a bit of caribou skin in that same spot. It swelled up thick and was very good. Last night I fell asleep while the boys were reading to me. This morning I was very, very sleepy. After the boys left—they left me tea, the caribou bones and another end of flour sack found here, a rawhide caribou moccasin and some yeast cakes—I drank a cup of strong tea and some bone broth. I also ate some of the really delicious raw hide (boiled with bones) and it made me stronger—strong to write this. The boys have only tea and ½ pound of pea-meal (Erbswurst). Our parting was most affecting. I did not feel so bad. George said, "The Lord help us, Hubbard; with His help I'll save you if I can get out." Then he cried. So did Wallace. Wallace stooped and kissed my cheek with his poor, sunken, bearded lips—several times—and I kissed his. George did the same, and I kissed his cheek. Then they went away. God b'ess and help them.

I am not so greatly in doubt as to the outcome. I believe they will reach the flour, and be strengthened—that Wallace will reach me—that George will find Blake's cache and camp and send help. So I believe we will all get out.

My tent is pitched in open tent style in front of a big rock. The rock reflects the fire, but now it is going out because of the rain. I think I shall let it go and close the tent, till rain is over, thus keeping out wind and saving wood. To-night or to-morrow, perhaps, the weather will improve so I can build a fire, eat the rest of my moccasins, and have some more bone broth. Then I can boil my belt and oil-tanned moccasins and a pair of cowhide mittens. They ought to help some. I am not suffering. The acute pangs of hunger have given way to indifference. I'm sleepy. I think death from starvation is not so bad. But let no one suppose I expect it. I am prepared—that is all. I think the boys will be able, with the Lord's help, to save me.

THE NEW YEAR MUMMERS OF QUAKER-TOWN

By RALPH D. PAINE

PHOTOGRAPHS BY JOS. N. PEARCE

"BUT the New Year's Shooters are such an old story," protested the Native of Philadelphia, looking solemn and bored. "They have been prancing through our streets for years and years. And the mummers are the commonest sort of persons, from Fishtown and Kensington, and, really, many of them live in what you might call our slums."

"But you've had this unique carnival, the most picturesque custom of your colorless old town, right under your noses without realizing what it is," I cried indignantly. "You take it for granted that because Philadelphia is used to seeing it, the rest of the world must know all about it. Common people. Pooh! The commoner your people are the more interesting they run."

The Native was disturbed at such heresy as this, and left the pilgrim to seek the New Year's mummery unassisted. This riotous festival ought to be held in high esteem by the average Philadelphian simply by reason of its impressive antiquity. No ready-made parade of masqueraders, this, for the puzzling name of "Shooters" trails back to the days before the Revolution, when the staid dwellers in the town of William Penn were wont to break loose on New Year's night with fusilades of muskets, horse-pistols and cannonading anvils. This custom was imported by the German immigrants, and was called "Shooting in the New Year."

Mummery was made a part of the yearly holiday-making more than a century ago, when the Christmas Eve frolics were looked upon as heathenish by the Quakers. The fun was a transplanted growth, a relic of the English "masques," given in the streets at Christmastide, and led by the Lord of Misrule. These revellers of Quaker-town trooped the streets in fantastic costumes, chanting rude rhymes, and demanded dole in the form of cakes, ale and cider. The most dignified youngster of the lot would commonly wear a battered cocked-hat, as taking the part of George Washington, while a popular character called "Cooney Cracker" was undoubtedly the forerunner of the popular conception of "Yankee Doodle."

So much for history. The "Shooter Clubs" of to-day trace no unbroken descent from these early institutions, nevertheless their title and their holiday have somehow sprung from this ancestry. Before Philadelphia was consolidated as a spraddling and brick-hued municipality, there was rivalry among the "Shooters Clubs" of the different boroughs, and this was the beginning of the heated struggle for the most gorgeous display which in recent years has made the city's streets on New Year's Day a dizzy whirl of life and color.

A prosperous and hard-working multitude, freed of the curse of crowding tenement houses, spreads over many miles of that humdrum Philadelphia which lays along the water front, from Fishtown on the south to Port Richmond and Kensington on the north. This is the old Philadelphia, running a few blocks back from the Delaware, and, lost in the tide of traffic, the fine brick mansions of the aristocracy of a century ago, survive as warehouses, shops and dwellings for the humble toiler. These people work for wages, not salaries, and what poverty there is in Philadelphia is to be found in their districts. Yet once a year they blossom so gaily in such prodigality of pomp and outlay, that all laws of economics and common sense are bowled topsy-turvy.

Each "Shooters Club" has its captain, chosen both for popularity and his ability to garner shekels. The ostentation is focused in the captain; his costume must be a delirious dream of impressive extravagance. No sooner is one parade over, than the members of the club and their friends must begin to save and maneuver for the next year. What is the result of this amazing strain and stress to outshine all rivals? The cold facts may hint at the scale of outlay. Last year, for example:

"When the Clements Club came in sight, the acme of the year's fancy dress costumes was seen. It was worn by Thomas Duffy, the captain, and is said to have cost more than six thousand dollars. The capes of the suit were fully sixty feet long. The material was white satin, with many finely wrought designs in gold embroidery. The capes were borne by one hundred and thirty pages, but even with their help, Duffy had a tremendous struggle to get along."

The Philadelphia reporter who baldly stated the case for Thomas Duffy had written his column about so many "Shooters" parades, that he bothered his head not at all with the more conspicuous problem: How did Thomas Duffy raise the six thousand dollars for such a costume, which must be measured by the acre rather than the yard. He was only one of twenty odd captains, who staggered ahead of their mammoth trains and hosts of satin clad pages, whose hands, hardened from work in the mills and the machine shops, were filled with such stuffs as royalty displays in its pageants. This dazzling hero, who is so nearly submerged that only his crowned head peeps above his train, like a marble on a counterpane, may be opening oysters in a white apron to-morrow, but to-day he is as gay a human butterfly as ever fluttered through a brief hour of intoxicated splendor.

These splendid personages are Kings of low degree, who could not afford the pomp of trains and pages.

Until recent years, the different organizations wandered each on its own hook, so that the show was a fragmentary affair. After generations of indifference, the City Fathers awoke to the fact that the "Shooter" manifestation deserved encouragement, so that now the clubs are mobilized in one great procession with aldermanic reviewing

Photograph by Gilliams.

A "Shooters Club" among its admiring friends in down town Philadelphia.

The Grand Marshal and his lordly staff draw near the reviewing stand at City Hall.

stands, and municipal prizes amounting to several thousand dollars are offered for the best club and individual costuming. But really, the "Shooters" did not need this fostering aid to keep the fire of rivalry burning high. Local and factional pride dragged the funds from the pockets of the participants as if they had been run through a wringer, even in the old days when the prizes were given only by the various "Business Men's Associations" of the several districts.

You must go down town into the haunts and homes of the revellers, to learn about the inside workings of this carnival. It was the story of Lizzie McGowan as confided piece-meal by several of her friends, which first told the writer that big emotions may be stirring beneath the glittering panoply of the parading "Shooters." This particular New Year's Day was clear as a bell, with flooding sunshine and a whooping wind with an icy edge that made South Second Street sizzle with life and animation. And when a dozen brass bands began to play as many crashing tunes at once within half as many blocks, even the cigar-store wooden Indians did a pirouette when nobody was looking.

The McGowan home was gay with flags and notable for an old locomotive bell hung from an upper window, which the young McGowans kept busy all day. Lizzie was the belle of Tasker Street, and Joe Hutchins was the captain of the Tobasco Sauce New Year's Shooters Club. That these two celebrities should be mutually attracted was in accord with the law of the fitness of things. But Miss McGowan was wavering and unconvinced that Mr. Hutchins was, beyond doubt, her heart's desire. And Captain Hutchins had reason to feel that it was "up to him to make good," and where in his whole life's round could come brighter opportunity than on New Year's Day. He staked all to win on the parade and foreshadowed his tactics by telling Lizzie the day before:

"The club has coughed up two thousand cold plunks for me clothes, and there's five hundred dollars' worth of gold lace on me train, and white fur till you can't rest. The band is goin' to stop in front of your house, and play 'She's the Only Girl I Love,' an' I'll wave my diamond-studded sceptre, an' yell 'Three cheers for the Queen of the Tobasco's.' How does that hit you, Lizzie?"

Lizzie was noncommittal, but bright and early on the momentous day, she was waiting in an upper window for the captains and their motley followings. There was a saloon on the corner of the block, and as the parade was forming, Lizzie saw many strange figures sift in and out for stays more or less protracted. Stout colored ladies with a masculine length of stride puffed long cigars as they waltzed to the curb with gauzey ballet girls whose gills were blue-shaven. Pink fairies and pinker cupids, ermine mantled royalty, clowns and minstrels pranced to and fro, while awkward marshals on heavy-footed steeds surged into the tangle and cursed themselves black in the face as they tried to align their hosts.

One by one the clubs were formed and marched past, but Lizzie's eyes were blind to their glories. At last the tall blue banner of the Tobasco Sauce Association was seen swaying far down the swarming street. Such a display of costly fabrics, plumes and colors had not been seen, and as it drew near, the jewel of the galaxy was the captain, Joe Hutchins, King of South Second Street. All the other extravagance was no more than the setting for this sublime figure.

His coat was of brocaded blue velvet, spangled with gold embroidery, with slashed pink satin sleeves. His breeches were of blue satin, his stockings of robin's-egg silk, and his shoes were gilded and studded with "diamonds." His crown was a foot high, and its radiance of emeralds, rubies and diamonds was at least a thousand candle-power. Before the king walked sixteen pages in satins and lace, bearing the streamers which radiated from the royal person like the tentacles of a starfish. Behind danced forty-eight pages in shrimp-pink velvet, and they held up the brocaded satin train which was bordered with ermine. It was a resplendent meteor with streaming tails of glory. The king wore a blondine wig, and his frecked features were overloaded with complexion. He chewed tobacco with notable vigor and no wonder that awe-struck small boys whispered:

"I'll bet he spits ten dollar gold pieces."

When this vision burst upon Lizzie McGowan's swimming sight, she held her breath until her little sister, fearful that she would

rend her very tight waist, began to thump her on the back. As the procession drew near to the house, the king cracked his complexion in trying to smile, and the band was playing "If you love me, darling, wink the other eye."

Alas, just as His Highness waved his sceptre as a command for the parade to halt, he was seen to stagger, sway drunkenly in his robes, and then topple to the pavement, dragging down with him his robes and his retinue as a circus tent collapses when the centre pole is withdrawn. Stifled in his gay cocoon, King Joseph the First was extricated after much pulling and hauling, and carried to the sidewalk. He was very pale and rubbed tears from his eyes with a pair of dirty knuckles. No offer of help came from the McGowan mansion, whose closed doors frowned a cruel inhospitality. Lizzie had vanished from the upper window. After a confused delay, one of the pages was thrust into the habiliments of royalty and the Tobasco Sauce Association moved on, much rumpled and crest-fallen. On the curb-stone with his feet in the gutter sat the derelict monarch, abandoned by his friends, and none was so poor as to do him homage. With a groan or two, he pulled himself together and loafed feebly to the corner where he vanished behind the swinging barroom door.

The Fish-town Belles of the New Year Parade, Invading the Haunts of Quaker-town Aristocracy.

Meanwhile Lizzie McGowan was weeping her anger out in the arms of her best girl friend.

"And him the finest captain in the Shooters' parade," she quavered. "I never, never seen anything as beyootiful as Joe was, and I've seen the Shooters ever since I could walk. There's been more pages and

The "Captain" and his Royal Train of Pages; These costumes cost several thousand dollars.

bigger club turn-outs, but nothing so distangey and wonderful as Joe looked when he come by the house. And then he falls in a drunken heap, soshed right up to the ears, and I told him and he knows it good and plenty, that if he got an edge on this year, I'd never marry him never. And he goes and gets loaded the very first day he swore off for. Aint it the limit? He had me on the run, too. Says I, a man that can turn out in that kind of style can deliver the goods to make home happy. He was doin' it all for me. And he spoils it and disgraces me before the whole of Second Street. I won't speak to him again, so help me. There's others."

But before sundown King Hutchins' best friend had managed to foregather with Lizzie's best friend, and explanations were hotly pressed.

"It's this way," exclaimed the flushed young man. "Joe's feelin' all to the bad over this. He's tore all to pieces. Sits by himself bitin' the heads off tenpenny nails, an' it's a good safe bet he goes plop into the Delaware if I can't frame up this mess so the truth will be put next to Lizzie. Joe wasn't loaded. He hadn't had a drink. He was workin' all night drillin' in a hall with them pages and things so as to get the marching order dead to rights. He was dead for sleep, he was dyin' on his pins and that streetfull of trains and satins and cloaks that was hung onto his neck weighed a ton. He hadn't walked more'n a mile before he was groggy, Why, here was fifty or a hundred Micks liftin' his robes, with it all comin' on him in the middle of them. He was plump wore out to begin with. He lands in Queer Street, faints dead away, takes the count right in front of Lizzie's number, an' she don't even pass him out a glass of water. Says she to herself, the scrap-heap for yours, Joe Hutchins. Now ain't that enough to make him dippy. Does she want him dead or sent to the nut college? Take your pick. It's even money both ways."

Lizzie's best friend was all sympathy and hastened away with these tidings. As the story was told to me, Lizzie sailed out in pursuit of her derelict lover and snatched him as a brand from the burning, with greetings that ran something like this:

"Joe, I couldn't feel more broke up if you'd batted me one in the eye. This grand-stand fainting fit has cinched my heart. You poor, wabbly old sport. And it was all for me. But before you kiss me, you've got to promise that it's no more Shooter parade for yours. You came to the scratch all right, but its wicked to blow all that stuff that ought to go for light house-keepin'."

Several years after I heard these moving facts, some of them from a spruce young fireman in a downtown hook and ladder house (his name began with Joe), this newspaper paragraph seemed a dramatic confirmation:

"Peter Moran, captain of the Red Onion Shooters Club, was taken to the Jefferson Hospital yesterday during the New Year's parade. He fainted after marching three miles under the weight of his costume, which was carried by eighty-seven pages and was of such imposing dimensions that the captain could not turn in Broad Street."

Nowadays, from two to three thousand mummers are in the consolidated parade, and the money prizes have grown to a total of nearly ten thousand dollars. Upper-class Philadelphia has condescended to find diversion in this pageant, so the mummers march up on Broad Street, and pass a reviewing stand at the City Hall, just like any commonplace demonstration. But these modern improvements have not spoiled the spirit of the old-time Shooters. They are rejoiced if they win the cash, which they promptly hurl into the club treasury for next year's costumes, but deeper than this runs the down-town rivalry among the "White Caps," the "Thomas Clements Association," the "Silver Crown," the "Fireside Club," the "Bismarck German Bund," the "Stringfellows," the "Home-Breakers" and a score of other organizations.

The first prize attainable for the finest club display is five hundred dollars. Last year the Thomas Clements Club members and their friends spent more than twenty thousand dollars in the effort to capture the "championship." It was their proud boast that "not a suit in the line had ever been on the street before." Captain Duffy's costume has been mentioned, but he was only a feature of a heroic program as presented by this one club. In his wake trailed four hundred handsomely costumed characters, every one in real silks and feathers, cavaliers, more monarchs, harle-

The "Captain" and his Royal Train of Pages: These costumes cost several thousand dollars

Weary with marching, the clowns rest their feet on Broad Street.

quins, and strings of courtiers whose trains weighed down pages by the score. When you consider that other clubs were out to surpass the "Clements," and that the decision for first place gave the judges some headaches, it is conservative to declare that this Philadelphia show deserves more than local attention. Last year the clubs in line had more than one hundred thousand dollars worth of costumes to display.

How can these wage-earners sustain the breaking strain year after year? Partisan pride does miracles of finance. The most prominent clubs enroll their members by the hundreds. Every man of them contributes through the year his assessment of one or two dollars a month, and without any violent effort the war-chest is furnished with a fund of several thousand dollars. The political leaders of the district go into their pockets for subscriptions which are as bread scattered on the waters. The shopkeepers of the neighborhood are ready to add their bit to the bulwarking of local prestige, and so from many sources the revenues of the Shooter's Club filter in. As for the eager and vainglorious captains, such a one has been known to slap a mortgage on his house or shop to rally a desperate finish for the king with the biggest, longest, finest setting.

So far it may seem as if the "Shooters" shot away a lamentable waste of gold for pure display and vanity, and the student of social conditions is likely to wag his head with an air profoundly mournful. But there is another side to this glittering picture. Besides the array of satin and tinsel which cuts so grievously into the community budgets, there is a division of comic mummers in the parade, and they supply infinite merriment to the crowds that pack the New Year pavements.

The kings and their trains have heartburnings and lame backs, as the largest crops of the day's harvesting. The rollicking tail of the parade keeps its eye on prizes hung up for the best comic display, yet manages to get its fun on the wing, and it is no great disaster if the prizes pass them by. Gray-beards of Quakertown can hark back to their boyhood years and recall their favorite characters in the parade and see how these have been handed down, with new actors, but the same disguises which have come to be a part of the show for all time.

William Penn invariably appears, disgracefully riotous and lightminded, and last year shocked uptown society by waltzing down street with "Carrie Nation," both unduly merry because of strong drink.

To show how dear is this parade to its own people down town, hear what befell one year when the line of march was curtailed without warning. In Frankford and Kensington the residents had raised more than a thousand dollars for prizes as an extra inducement to the "Shooters," and small shopkeepers and millworkers were the leading contributors. The crowds waited patiently until afternoon, but no parade appeared. Then weary children began to whimper and their parents to wax angry. The day drew on toward the bleak and early dusk, and the sidewalks were still populous with wistful little faces looking for the "funny people," the greatest delight of the whole, long year.

It was evident that the parade had been sidetracked and the holiday was turned to mourning. But the victims were not done with their bitter fiasco. They held indignation meetings, they appointed committees of investigation, and they went gunning for the marshals who had shortened the route, until these culprits led wretched lives and begged to be let alone. Next year when the "Shooters" swept through Kensington in all their glory, their reception was so enthusiastic that the police had to take a hand in the argument. Carefully passing over the home talent in the procession, the populace centered its attack on the men from Fishtown and other faraway neighborhoods, and put dents in their ranks with half-bricks and other handy missiles.

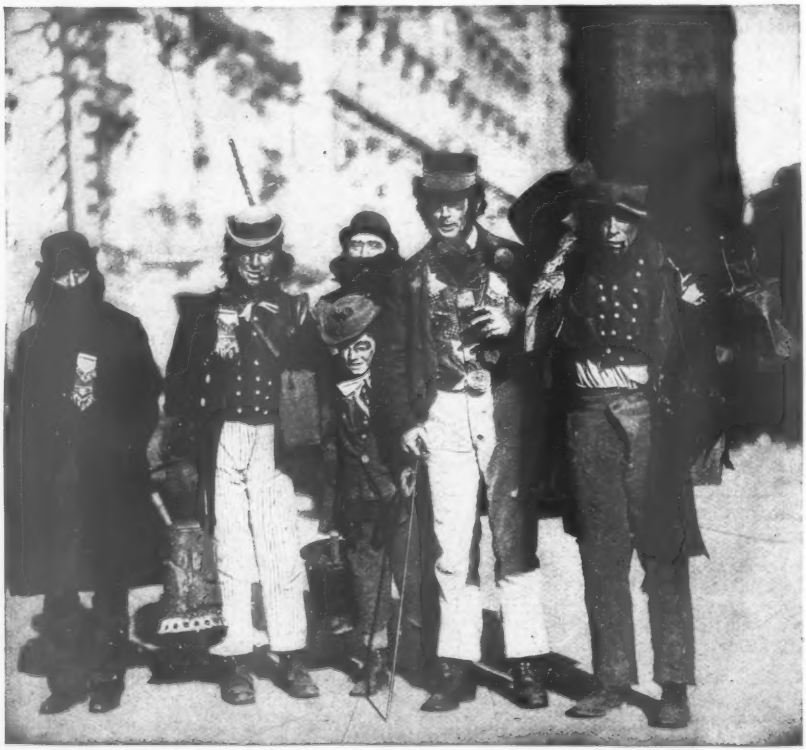
When the smarting aliens, who held themselves guiltless of the previous year's fault, tucked up their robes and sailed into the spectators, the "Shooters" of Kensington who were in line, turned on their fellow potentates from Fishtown and Southwark, and defended their own people of the curb. The multitude thereupon craftily withdrew from the fray, and left the warring bodies of "Shooters" to fight it out, now that the issue was fairly joined.

It was without doubt the most satisfying exhibit of "Shooter" attractions ever seen in Kensington. According to a veracious eye-witness, the royal captain of a Fishtown club dragged his thirty-odd pages

after him, like a runaway comet, as he lunged after a potentate of Kensington, and the two clashed in what is technically known as a "free-arm clinch." They were able to use their sceptres freely, and two refulgent crowns were instantly battered down over two pairs of hostile eyes. Thus blinded, the royalties jabbed with their sceptres with such shocking damage to facial beauty, that the excited pages, with a happy inspiration, ran swiftly around the pair and so enwrapped them in their robes that they could be picked up and carried from the scene to cool off, locked in each other's arms, their curses muffled. The fighting clans were like an extravaganza gone mad, and when the police was able to pry them apart, such a wreck of nobilities, lords and gentlemen-in-waiting had not been seen since the French Revolution. As a stirring climax, a prosperous saloon-keeper of Kensington mounted a truck and shouted at the top of his lungs: "I'll be one of ten men to trible me subscription av fifty dollars if th' distinguished collection av Shooters will promise to repate th' performance next year. It was th' most successful an' enjoyable iver seen in our midst."

But the unique flavor of this celebration cannot be lost. It is as much Philadelphian as scrapple, catfish and waffles, and Independence Hall.

It gives such a distinctive filip to New Year's Day as can be found in no other American city, and what matters it if the husky lad on the sidewalk shouts to his friend in satin and ermine: "It's chicken to-day and feathers to-morrow for yours, Bill. Them giddy rags means the free lunch counter for three months, that's a cinch. An' hustling pig-iron at Cramps' to-morrow aint goin' to come a bit easier."



The Jolly Tinkers Chorus of a Winning "Shooters Club."

MOTORING WITH "MR. CRŒSUS"

THE CAR AS A DISTRIBUTOR OF DOLLARS —THE UP-TO-DATE RACING STABLE

By RENÉ BACHE

IF only for the reason that it offers a new opportunity for the spending of money, the automobile should be regarded as a substantial blessing. For in these days the very rich are constantly puzzled to discover novel forms of amusement, which, in order to be recognized as fashionable, must necessarily be expensive. A sport, or other species of diversion, that is within easy reach of the many, must soon lose vogue—unless, as in the case of golf, the fortunate few are able to pursue it under exclusive and luxurious conditions. Motor-cars, it is true, have already become common, but the cheap ones bear only a humble relation to those used by our millionaires for purposes of pleasure, the enormous cost of which must forever bar the possession of them to persons of moderate means.

To maintain a private locomotive is an expensive affair, and a first-class touring automobile costs as much as a handsome city residence. But a man who goes into motoring seriously requires quite a bunch of motor-cars, and, to be comfortable, he can hardly get along with fewer than half-a-dozen. Furthermore, he will need to buy at least one or two new ones each year—W. K. Vanderbilt, Jr., never keeps a car more than six months—in order that those in stock may always be spick and span, of the highest obtainable horse-power, and unstrained by racing. It would never do for the owner to find himself obliged to apologize for the performance of one of his vehicles by saying that "when she came from the factory she could go three miles an hour faster."

That well-known young millionaire of sporting proclivities, Mr. G. Astor Midas, considers that he is rather economical when he keeps only seven automobiles. Indeed, with a less number, he would find himself somewhat at a loss to meet every-day requirements of transportation and amusement. With seven cars—the term "automobile" is used only by ignorant outsiders—he can go in for racing in a moderate way, and is provided with such vehicular conveyances as are absolutely requisite for the establishment of a gentleman who spends half the year out of town, and who, disliking the railroad, prefers to travel by gasoline between his country place and the city.

Two of the cars are racing machines, purchased for $13,000 and $16,000 respectively, the latter having greater horse-power. Of the others, one is a light vehicle, with seats for the owner and his chauffeur, and is used for short trips to town and back. It cost $8,000. There is an omnibus car (price $12,000), seating seven or eight persons, and employed for carrying parties to and from the country place. To these are added a large touring car, for seven people, worth $15,000; a light touring car (value $12,000,) for use at odd times, and an opera car, holding four, to convey members of the family to the theatre and to entertainments. This last is covered, being intended particularly for cold weather. It was bought for $8,000, making a total of $84,000 for the seven machines.

This, of course, represents only the first outlay. Expenses of maintenance run up to about $20,000 a year, the chief item being for wages of a number of indispensable employees. Mr. Midas keeps a racing chauffeur, who is the head man, at $3,000 a year. Under him is a touring chauffeur, at $2,000 per annum, and there are two assistant chauffeurs, who are skilled mechanics, at $1,800 and $1,500, respectively. To these are added two expert cleaners and polishers, who see that the machines are always spick and span, and who receive $80 apiece a month, running the pay-roll up to a total of somewhat over $10,000 a year.

There are a great many incidental expenses. For example, when a single set of four tires with inner tubes costs from $240 to $400, this item alone may amount to $2,000 or $3,000 in a twelvemonth. Parts that have to be supplied are far from cheap, notwithstanding the fact that many of them, such

On the Southern Atlantic Beach—hauling a car up to the road after the race.

Photograph by Edwin Levick.

Photograph by Edwin Levick.

The New and the Old.

Photograph by Pictorial News Co.

The gallery at a hill-climbing contest.

as shafts and gears, can be made at home. In his auto-stable in the country Mr. Midas, for the sake of economy and convenience, has established a small but fully-equipped machine shop, with lathes and other apparatus, by the aid of which the mechanics in his employ are able to turn out pretty nearly anything that may be requisite. There is $2,000 or $3,000 worth of machinery, perhaps, and all of the ordinary repair work is done on the premises.

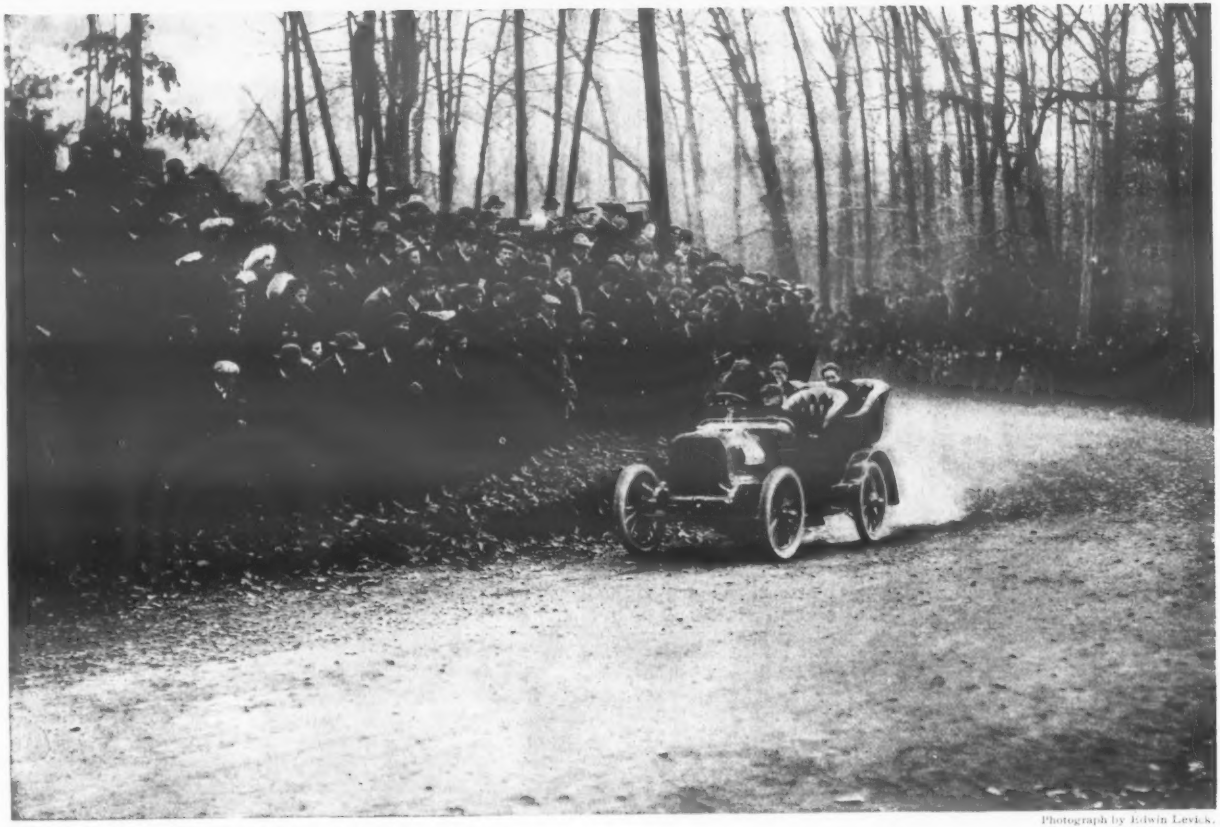
Now, in the list of motor vehicles above given no mention whatever was made of those which Mrs. Midas requires for her own personal use. These are three in number—a brougham, a coupé, and a victoria—and all of them are run by electricity. For use in town, and especially for a lady, they are much more convenient than the gasoline-propelled conveyances, and they have the great advantage of being noiseless. Their finish is much finer than that of the gasoline cars, and in all respects they are made to imitate as closely as possible the horse-drawn carriages of corresponding types. So gracefully are they constructed that one would not imagine how heavy they are, though, as a matter of fact, an electric brougham, owing mainly to the storage battery so artfully concealed, weighs something like two and a-half tons, or twice as much as an ordinary touring car.

Mr. Midas does not use electric automobiles outside of the city, because they are not well adapted for long journeys. If a gasoline car gets stranded anywhere, it is usually possible to find the means requisite for going ahead. Gasoline, at all events, is a staple article and easily purchased; but to obtain a fresh supply of electricity is impossible beyond the limits of a good-sized town. The storage battery some day may be reduced in bulk and greatly improved, but, for the reason mentioned, the electric motor car for touring has no future. At present the practical radius of travel for such machines is hardly more than twenty-five miles, and on this account their employment is restricted to large centers of population.

The larger of the two touring cars owned by Mr. Midas is a wonder in its way. It has what is technically known as an "enclosed body," and is, to all intents and purposes, a room on wheels. One might almost call it a suite, inasmuch as it includes a completely-equipped lavatory, with washstand and running water (supplied from a tank overhead), and has sleeping quarters for one or two persons, the seats being convertible into beds. Mirrors are inserted in the walls, which have shallow cupboards to contain such necessaries as brushes, combs and towels. There is even a cigar-case, with a cigar-lighter, set into a recess, and one of the wall-panels folds down to form an escritoire. Blankets and linen are hidden under the seats, beneath which there is plenty of storage room.

The amount of space available for the concealment of things in such an automobile is really astonishing. Whatever cannot be stored conveniently beneath the seats is stowed away in the ingeniously-contrived lockers in the walls. Neatly-made hat-boxes occupy some of the room under the seats, against the back of which there folds down when not in use, a mahogany table-top. This may be employed either as a card-table or for eating purposes. Finally, beneath the vehicle there is built, so as to form part of the car, a commodious ice-chest, in which eatables and drinkables may be put while touring. Under such circumstances it is not always easy to purchase even the every-day necessaries of life, and it is an immense convenience to be able to carry on a journey a supply of perishable food luxuries. The wooden box is lined with zinc, and between metal and wood there is a layer of felt and another of sawdust, so that a few pounds of ice will keep the contents of the receptacle cold for many hours.

If Mr. Midas is out merely for a day's excursion with four or five guests, he can carry along adequate refreshments for the party in an "outing basket," which is slung outside of the motor-car. The basket has a refrigerator compartment for cracked ice, which lasts five or six hours—a very ingenious contrivance consisting of a zinc-box covered with felt and with an air-tight top. It also contains a box of porcelain-coated aluminum, made in two halves, one of which is big enough to hold a chicken, while the other will accommodate enough bread to make fifty sandwiches. There are also a tea and coffee kettle, an alcohol lamp, a porcelain jar for butter, two cylindrical bottles for pepper and salt, egg-cups, and half-a-dozen of everything in the way of plates, cups, saucers, knives, forks and spoons.



Photograph by Edwin Levick.

A hill-climbing match always greatly interests the people.

The most wonderful thing about these outing baskets, which are constructed especially for use by automobilists, is the condensation of their contents. Knives, forks, and spoons are packed in such a way as to occupy practically no room, one method adopted being to attach them inside of what might be called the covers of a folding leather book. Tumblers and bottles are encased in a delicate mesh of wicker, so as not to be easily broken; napkins are neatly strapped in the top of the receptacle, and, for the sake of fit, the plates are sometimes made rectangular instead of round. Sandwich boxes and salad boxes, for the keeping of such edibles in the freshest possible condition, are usually of the metal known commercially as nickel, but which is in reality galvanized tin. Everything about these baskets is expressive of the luxury of daintiness, and one pattern opens up like a little girl's doll-house to reveal its closely-packed inside-works.

The millionaire of to-day, who is looking for something new and expensive in the way of a motor wagon, may purchase a touring car which, being provided with three bodies for different purposes, is in reality rather an economical vehicle. In winter it is a closed cab of landaulet pattern, opening at both sides. When spring arrives, the owner substitutes for this a touring body with canopy top, on which luggage and other odds and ends may be carried inside of a railing. There is glass in the rear, and in front the chauffeur is protected by a sheet of glass which, when not in use, is swung up beneath the top of the vehicle. Thus there is plenty of light, and, curtains being provided at the sides, the occupants are absolutely protected in case of rain. Finally, there is a light, low body for fast riding, which may be used in such non-public races among gentlemen as are popular at Newport and elsewhere. Rivalries and disputes regarding the relative speed of cars are always liable to occur, and it is customary to settle them by the arbitrament of actual contest, with perhaps a few bets to lend additional interest to the sport.

It is a growing habit among very rich men to spend the winter, or part of it, in Florida, and to take both touring and racing cars along with them. Sometimes they travel a large part of the way in their own motor vehicles, carrying plenty to eat, because there are long stretches of the route through Dixie Land where anything in the way of food, beyond simple hog and hominy, is practically unobtainable. The racing machines are forwarded by rail or steamship, and the wealthy owner, if he makes the journey, will surely take with him three or four of his hired men. He cannot get along without two chauffeurs in a race, the second man being needed to give help in emergencies. For example, if a tire comes off (a not-infrequent accident) No. 2 jumps off and fixes it.

Motor racing is a favorite winter amusement in Florida, and affords the chief attraction to many of our sporting millionaires who at this season visit that part of the country. Young Waldorf Crœsus, who is so famous for the reckless risks he takes in his efforts to make speed records, will enter his cars perhaps in a dozen contests in the course of three or four months, paying in each case an entrance-fee of $100 to $500. Such fees run up to quite a pretty figure in a year, but they have the good effect of barring out the common people. If auto racing is to continue to be worth while for our millionaires, it must be exclusive—a form of entertainment in which only the very rich can afford to indulge.

Young Mr. Crœsus owns a touring car that cost him, so he says, $28,000. The vehicle may be said to touch the top notch of luxury, with its silver trimmings and other expensive incidentals; but then, you see, it was made to order. There is a popular notion to the effect that automobiles run up in price to $50,000 and $60,000, but, as a matter of fact, the finest sort of a motor wagon may be purchased for $15,000. This signifies a reduction of about $3,000 within the last two or three years, the tendency being in the direction of lower prices for all kinds of cars. Already there is on the market, at only $700, a strong and efficient two-cylinder machine, noiseless, and in all respects satisfactory for every-day locomotion. There are not a few rich men to-day who, like John Jacob Astor, prefer to use such light and easily-managed vehicles, which they can handle without help, dispensing with the chauffeur.

It has come to be realized that the chauffeur is the greatest drawback to the sport of motoring. He is a first-class nuisance from beginning to end. Standing in not

A hill-climbing match always greatly interests the people.

Photograph by Pictorial News Co.

Even the mountain roads, steep and uneven, are negotiated without difficulty.

infrequently with the garage, he steals his employer's gasoline, and the latter is helpless to stop it. Of course, he gets a commission on everything that is bought; but the coachman does the same, and that is only a minor grievance. At night, and at other odd times, he takes out the machine on his own hook, filling it perhaps with women of dubious character, and it happens quite often that all hands get drunk and wind up in the police court next morning. The man is discharged, but his successor is likely to follow the same practices. A more irresponsible person than the average chauffeur is hardly to be imagined, and he is more than apt to be disreputable. His history is usually a mystery. When he is arrested for running over people, his master has to pay damages, and by careless abuse of the car he rapidly wears it out. If you will run your machine for yourself for a while, dispensing with the man, you will find that your bills for repairs diminish amazingly.

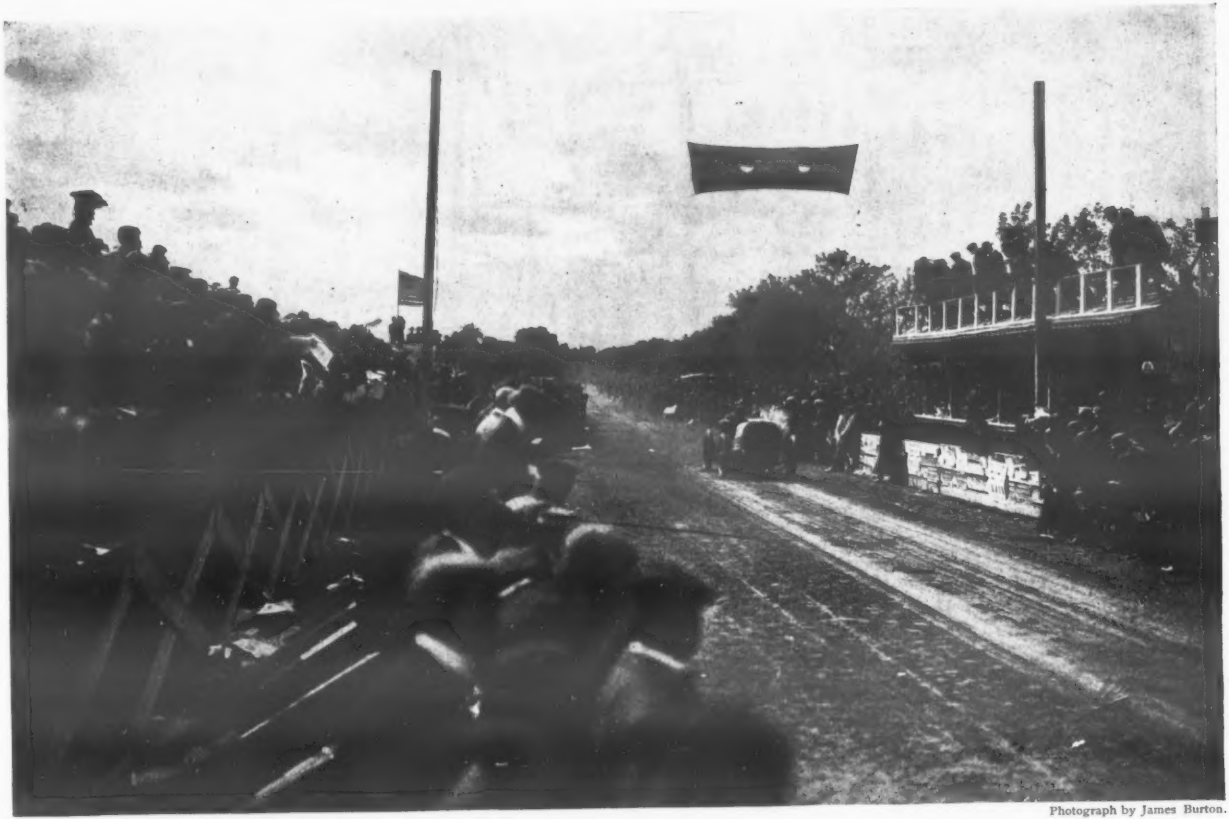
There are not a few opportunities for economy in automobiling. Many people now-a-days save traveling expenses by making long trips in motor cars. Suppose, for example, that you want to go from Philadelphia to Portland, Me., taking your wife and child. Your touring car is quite as comfortable a conveyance as a railroad train, and you have the advantage of being able to stop wherever you wish en route, incidentally saving three fares each way. But as yet the possibilities of luxurious traveling by gasoline have not been developed. A few years from now it will be as much a matter of course to make long journeys in motor vehicles as by rail, and automobiles designed for such purposes will be provided with conveniences, not only for sleeping, but for cooking.

One may say that the family car for traveling is already in sight. It will be a little house on wheels, of light construction, and with the kitchen in front. Part of the machinery will be under the floor of the kitchen (a tiny compartment only big enough to contain the cooking apparatus), the driving power being forward, of course. A small alcohol stove will serve all necessary purposes, and whatever else is requisite in the way of utensils, etc., will easily find storage room; the crockery and other tableware being slung behind in a leather box. Food supplies may be carried on top of the vehicle, the main portion of which will afford accommodations for living, dining and sleeping, two divans being readily converted into beds. Among other conveniences will be a seat that folds up and discloses a washbasin. In such a car a long journey may be accomplished comfortably at an average speed of fifteen miles an hour.

When Young Mr. Crœsus, in January last, made a flying trip from New York to Washington, the members of his party were as a matter of course well provided with wraps. All of them, including the ladies, wore fur coats, fur caps or hoods, and fur gloves. The chauffeur, however, was clad in a complete suit of leather, which, with the head-piece, made him look somewhat like a mediæval man in armor, and, because his feet could not be wrapped in such a way as to interfere with his control of the machinery, he was provided with fur boots that came up over his shoes as high as the knees. Nevertheless, and although so voluminously protected against the cold, the millionaire and his guests were becomingly attired. It is no longer considered necessary that an automobilist shall get himself or herself up in the likeness of a bear or a burglar, and the fur garments worn under such conditions by persons of taste and fashion are made of squirrel skins, Persian lamb, or other short-haired pelts which can be cut to fit the figure.

Such auto-coats are not made for ordinary folks like you and me. They cost from $500 to $1,000 apiece, and some of them are lined with velvet, so as to be utilized on occasions as opera cloaks. Another thing that is nice about them is that they have capacious pockets, rendering a muff unnecessary, when a lady is the wearer; and it is worth mentioning that the one worn by pretty Mrs. Crœsus has a wide collar which may be turned up so as to cover her ears. Furthermore, she has a hat of grey squirrel-skin, like a Highlander's cap, with a scarlet bird's wing on the side of it, to lend a touch of color.

One of the products of the automobile fad, industrially speaking, is the auto-tailor, who devotes his attention exclusively to the making of auto-garments. He will make for you, at prices by no means impossible, an auto-coat of coonskin lined with musk-rat, of mink fur fringed attractively with mink tails, or of white goatskin lined

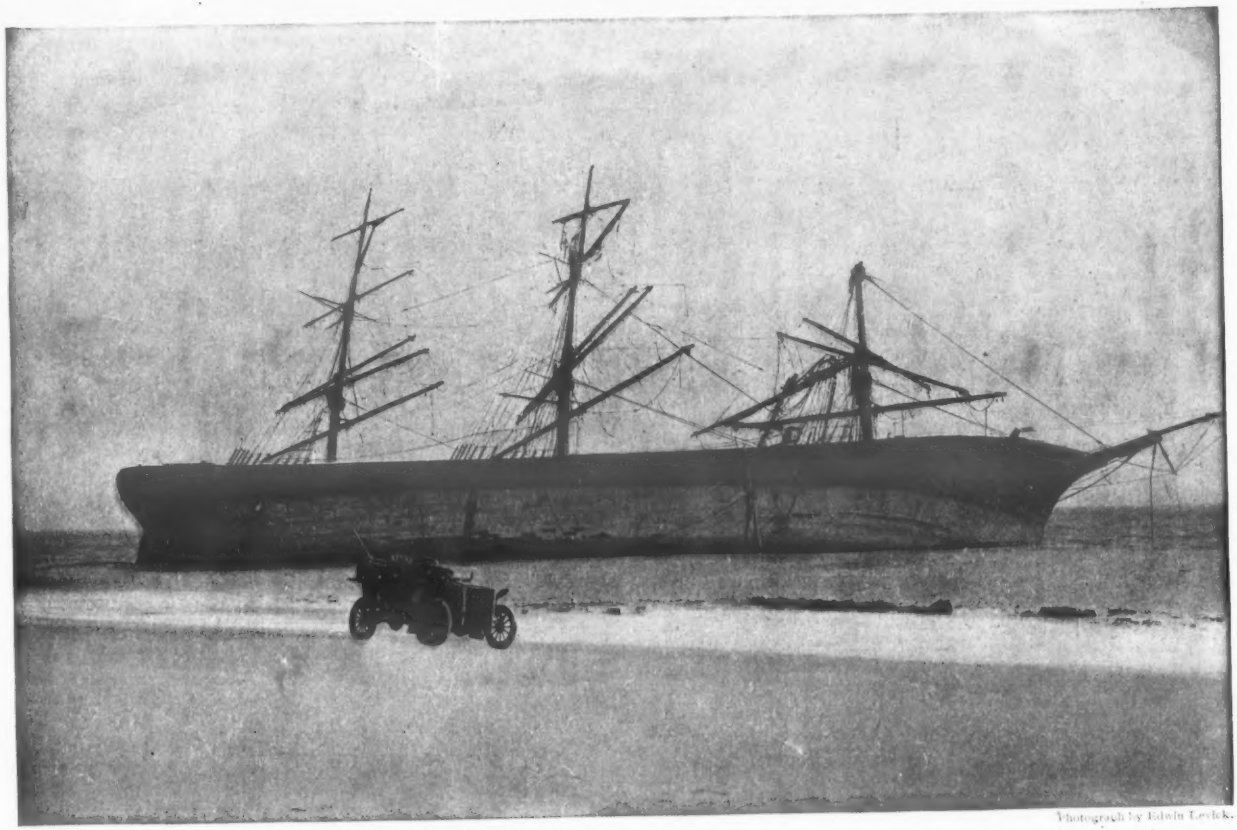


Photograph by James Burton.

A scene at the famous Long Island Vanderbilt Cup race.

Photograph by Pictorial News Co.

Touring at leisure and in utmost comfort.



Photograph by Edwin Levick.

On the Virginia beach, where an occasional wreck gives an objective to the tourist.

with white broadcloth. But the very latest thing is the costume of Russian or suede leather, soft and pliable as satin, the coat and skirt edged with black astrakhan. If possible, the leather should be dark green in color, with a toque of the same material and gaiters to match. To make the costume fit closer to the figure, a belt is worn, likewise of leather, with clasps of silver.

You may buy for $30 a pair of beaver gloves that come to the elbow, and a cap of the same material will cost you $50. A hat of beaver or suede, with a chiffon veil, is becoming to the average woman, but ladies of fashion are showing an inclination to prefer, for cold or disagreeable weather, or for use at night, hoods so contrived that they will serve to cover any hat, even though it be made of flowers or feathers, without doing harm. Some of these hoods are of silk, lined with squirrel fur, or of opossum skin lined with satin.

Generally speaking, the tendency in automobile garments is in the direction of becomingness. Summer costumes for the women are far prettier and more tasteful than they were a year or two ago, and even the dust-proof cloak which covers my lady from head to foot is made of champagne-colored silk, with a hood to match. In winter she encases her dainty feet in a sort of fur bag, lined with the same material, to keep them warm. As for her chauffeur, the oddest and most novel item of his personal accouterment is a pair of "spring pants," as they are called, which, made of leather, are fastened about his waist by a semicircle of steel in lieu of buttons. When, finding himself too warm, he wishes to dispense with the garment, he simply gives it a jerk and throws it aside. Auto-robes of fur, by the way, are made now-a-days on the same principle, rendering it easy to tuck them around one's person or to cast them off.

The brains of thousands of clever inventors have been concentrated for some years past on the problem of improving the automobile in the direction of luxury, convenience and adaptation to the greatest possible variety of purposes. One desideratum being to make the vehicle lighter, the aluminum body, which is said to save 600 pounds in the weight of a touring car, has been put on the market. In the direction of cheapness the tendency is steady, and it is only a question of a short time when the $500 machine, strong and capable of doing satisfactory work, will invite purchase by people of moderate means who are unable to afford the more expensive motor wagons.

All of the new cars open at the sides, and not at the back, for the sake of greater convenience. The electric brougham in which Mrs. Crœsus makes calls is heated by electricity, and four incandescent lights illuminate the interior of the vehicle at night. Her husband, who is an all-round sportsman, owns a hunting automobile, which was made to order, with a gun-rack and other appropriate conveniences, including even a compartment suitable for stowing two or three dogs. Some day, doubtless, motor cars will be fitted up as traveling studios for artists who are able to afford such a luxury, and the painter's outdoor work will thus be accomplished under the most delightful and inspiring conditions.

The automobile has already secured recognition for itself as a war engine, and both the German and French armies are making extensive use of motor wagons, especially for the transportation of food supplies.

Automobiles are now being made in this country with flanged steel wheels, for running on railroads. They are used by officials for inspection cars, and also for switching. But this is not altogether new, inasmuch as gasoline motor wagons have been employed for some time past in regular passenger service on European railways. Last September Charles J. Glidden, of Boston, in a touring car of 24-horse power, ran 1,800 miles on the rails from Minneapolis to Vancouver, B. C., in sixty hours, covering the distance at an average speed of thirty miles an hour. It was a wonderful performance, especially in view of the fact that nearly all of the journey was through a mountainous country.

Mr. Crœsus, at his place in the country, has a stable—if such it may be called—especially constructed for the housing of his machines. It has a stand for cleaning the cars—a small platform, above which a hose is so arranged that a stream from overhead can easily be turned upon any part of the automobile that is being washed. In one corner is a tank for gasoline, under ground for the sake of safety, and a small pump provides ready means for obtaining the liquid fuel when it is wanted. Along the walls are lockers for furs and convenient receptacles

for the storage of paraphernalia of all kinds, even to sweaters and goggles for the dogs. The auto-dog, by the way, promises to develop before long into a specialized breed, and he requires goggles and a sweater to protect his eyes from the dust and his body from the cold.

The speed record for automobiles stands to-day at a little less than forty seconds for one mile, or about ninety-three miles an hour. Some day, undoubtedly, this will be badly beaten; but larger machines with greater horse power will be required, and the roads must be better. Fifty years from now there are likely to be magnificent boulevards extending from city to city—even perhaps for such distances as from New York to Chicago. They will be double, to provide a road for coming and a road for going, and at night they will be illuminated brilliantly by electricity. Over these smooth paths, broad and straight, motor cars will be able to run at a gait of one hundred miles an hour or more, outstripping the fastest electric locomotives of that day.

Possibly it is just a dream, but it should be remembered that as yet the automobile is only in its infancy. One must acknowledge that its development has been well-nigh miraculous, and, in speculating as to what it may become within the next half-century, a moderate exercise of the imagination is surely both discreet and reasonable. Like the railroad, the motor car, by bringing places and people closer together, has made the world smaller, and, if only for the reason that it fetches human beings nearer to each other, it may be confidently expected to remain in the future a conspicuous and useful feature of civilization.

SONG OF THE AUTOMOBILE

By EDMOND DE LUCE

Lord of all moving things,
Speeding on brazen wings,
Gaily I dash through the highway's bright gleam.
Sharply the iron rings,
Vital its quiverings,
As I go flashing past meadow and stream!

Loudly my heart doth sing,
As to wheel I cling,
Pulsing in time to the motor's swift beat.
Joyous all care I fling,
Bidding the rushing wind
Bear it away to some distant retreat.

Madly the horn I sound,
Daring, I dash around
Curves that may end in the ditch and the grave.
Coursing like fleetest hound,
Hot on Time's fleeing trail,
O could I catch him, the life-stealing knave!

Wildly the people stare,
As I dash here and there,
Shooting like comet with long tail of dust.
Scarcely my joy they share,
Judging from shouted prayer—
"Hope your darned auto will dry up and bust!"

The Table in Front of the Arena.

SIDE SHOW STUDIES

THE LIBERTY OF FRANZ AND THE REBELLION OF FUZZY WUZZY

By FRANCIS METCALFE

WITH DRAWINGS BY OLIVER HERFORD

MADAM MORELLI, the pretty little Frenchwoman who makes a half-score of leopards, panthers and jaguars do things which nature never intended them to do, had finished her act and driven the snarling performers through the narrow runway to their separate cages, fastening each one, as she thought, securely. Two French clowns were filling in the time and making the audience of Coney Island pleasure seekers laugh by their antics with a performing dog, while the stage hands were bringing in the properties for the next trained animal act, when the proprietor came from behind the scenes and strolled, apparently unconcerned, to the back of the Arena, where he could command a clear view of the performance, the audience and the cages. He said a few words to each of the trainers and keepers whom he passed, and the stranger, who knew the clock-like regularity with which each one of them went through his alloted duties, noticed an unwonted haste and suppressed excitement among them.

As he joined the proprietor the sound of hammering mingled with the noise of the blatant brass band and the cries of the ballyhoo spielers for the other Dreamland attractions, which came in through the open windows, and he saw that Stevenson, the mild-eyed quiet man who is always on hand to rescue imperilled trainers and keepers when their own carelessness, or unexpected revolt on the part of the animals, leads to a fight, was rapidly nailing boards over the ventilating spaces above the cages. Madam Morelli, whip and training rod in hand, hurried from her dressing room to the runway, and every keeper and trainer seemed to be loitering in the space between the leopards' den and the audience.

He looked at the proprietor enquiringly, but the little trickle of blood which ran down his cheek from under his cap answered the question he would have asked, an animal was loose and the proprietor had encountered it in his rounds. A crash of wierd music from the band drowned the sound of a cracking whip and sharp commands which came from the runway, and announced the appearance of Brandu, the snake charmer, in the exhibition cage, and the audience watched him play with a cobra, all unconscious that Franz, the jaguar, which a few minutes before had desisted from his attempt to tear the fair shoulders of Morelli only after a dozen blank cartridges had been fired in his face, was a gentleman-at-large in Dreamland. The proprietor gave a sigh of relief as the jaguar backed into his cage from the runway, snarling and striking at the little woman who forced him backwards with the whip until she was able to slam the door and make him once more a prisoner. When she passed them on her way back to the dressing-room, her dress was torn, and her eyes were flashing from the excitement of the encounter and anger at the carelessness of the carpenter who had left a board loose at the top of the den.

Two French Clowns and a Performing Dog.

"Of course, that might have been a serious thing for the jaguar and for my pocket book," said the proprietor as three deep scratches in his head were being plastered up. "I couldn't afford to take any chances of an accident, and he would have been shot if he had attempted to come through a ventilator into the Arena, but a trained animal like that is worth a goodish bit of money. He let me know he was loose by giving me his love pat when I was walking through the runway, and as Morelli is the only one who can do anything with him I sent for her. She can whip considerably more than her own weight in wild-cats, and there was not the slightest danger to the audience, but not many men would have relished her task of going into that passage with the beast loose on top of the cages." He negatived the press agent's suggestion to make a scare-head story of the escape for the papers, and suggested that they should go up and hear Madam Morelli's account of it. She was sitting on the edge of her bed, mending a rip which the jaguar's sharp claws had made in her gown, and she shrugged her shoulders when the stranger inquired if she had been hurt.

"It was nothing," she said laughing. "He jumped at me from the top of a cage when I came in, but I beat him off and whipped him back into his cage. It was only the close quarters which made it bad, for I am used to fighting them." She was interrupted by a yapping and caterwauling in the doorway, and sprang on the bed, her face white with terror, as a small terrier and the menagerie cat rolled into the room in a clawing, biting mix-up. The terrier was raising a litter of puppies in the next room, and the cat had transformed the space back of Morelli's bed into a feline nursery, and a meeting of the two anxious mothers in the hall had led to trouble. Madam Morelli always goes through her performance in an evening dress, and she stood on the bed, her long train gathered closely about her, trembling like a leaf, when the proprietor finally separated the combatants and restored peace.

"You wouldn't think that a woman who had just come from a fight with a two hundred pound jaguar, which could easily tear her to pieces, would be scared at a scrap

between a toy terrier and a mongrel cat," said the proprietor, laughing, as he led the way to the café table. "But she makes a specialty of the larger species."

"This matter of specialties seems to run through every branch of the show business," said the Press Agent as they took their seats at the table. "I ran a dime museum in St. Louis a few years ago—in those days there was lots of money in it—and the freaks would never stand for any change in their billing. We used to have a fresh lot sent on by our New York agent every two weeks, and one Monday morning when I went down to look over the new arrivals, I knew that he had been up against the demon Rum, when he engaged such a tough looking bunch. The alleged fat woman looked as if she was wasting away with consumption, and the bearded lady had a way of absent-mindedly humming the popular airs in a bass voice which gave the whole snap away. There was one likely looking girl and when I asked her what she was she told me she was the web-footed lady and showed me her feet, which had little pieces of skin growing between the toes.

"I knew that wasn't good enough, so I told her she was mistaken; that she was a Circassian beauty, and I gave her a wig and the fixings and put her on the platform. But say, would you believe it? She was so mad and embarrassed by the change in her stunt that when the lecturer was calling attention to her blond beauty, she would blush until she looked like an Indian Princess, and every time he turned his back she would take off her shoes and wiggle her toes at the audience to show what she really was.

"It was up to us to get some real attraction to tide over the time until our agent should get sober and send us another bunch of freaks, so Merritt, who was my partner, and myself hunted up a big buck nigger and made a deal with him to go on as a 'Wild Man.' We ripped up a hair mattress and glued the contents onto him, and wired a couple of big tusks to his teeth, and with an iron collar around his neck and a log chain around his waist he was as good an imitation as was ever faked. We put him in a big cage which we had used the week before for a mangy old lion; one of the five hundred or so 'Wallace the Untameables' which were touring the country, and Merritt taught him to howl like a steam calliope.

"We called him 'Fuzzy Wuzzy, the Terrible Man-Eating Cannibal,' which was a waste of words, but Merritt had language to burn. He had got hold of a phony five hun-

"Things which Nature never intended them to do."

dred dollar bill, and when he was giving his spiel about how Fuzzy Wuzzy was captured upon a desert island, where he was found chewing a human leg, and how he couldn't eat anything but raw meat, and was always trying to get at his keeper for dessert, he would wave his phony five hundred spot over his head and give it to 'em good.

"'Five hundred dollars, ladies and gents, I will give to any man who will remain for the short space of two minutes in the cage with Fuzzy Wuzzy! Five hundred dollars to any man who is brave enough to run the risk of letting this terrible man-eating cannibal get his hinder limbs about him, for then all would be lost and Fuzzy Wuzzy would fasten his terrible fangs in his victim's throat and suck his ber-lud.'

"Well, it was a good spiel, all right, all right, and when Merritt struck that part one of the supers would prod up old Fuzzy, who would rattle his chains and howl for fair, and the audience would get cold chills down their backs. We were playing to the S. R. O., and giving so many shows a day that Merritt pretty nearly lost his voice, and Fuzzy had been prodded so much that he had to take his meals standing up. We ran 'em through pretty fast, and one afternoon Merritt was just going to give the 'All out' signal, which cleared the exhibition hall for the next performance, when up steps a big husky black roustabout from the levee and commences to strip off his coat.

"'Jes' a minit, boss,' says he. 'Ah reckon ah needs dat five hundred in mah bizness,' and Merritt looks at him in astonishment.

"'My deluded colored brother,' says he, 'Do you appreciate the fact that you are going to a certain and horrible death? If this terrible Fuzzy Wuzzy gets his hinder limbs about you he will suck your ber-lud.'

"'Ah doan reckon he'll git me, an' ah suttenly needs de money,' answers the coon, and continues to strip, and Merritt sizes him up and sees the finish of Fuzzy Wuzzy, who was shaking the bars and trying to get away from the super who was prodding him; but everybody thought he was trying to get at the coon to make a meal of him, and some of the women folks were getting hysterics. One of the boys had put me wise, and I broke through the crowd and called a halt in the proceedings.

"'Ladies and gentlemen,' says I, 'I didn't believe that a man existed who was foolhardy enough to be tempted to certain death by the lure of a paltry five hundred dollars. But although this man is so reckless of his own life, I must insist that he get a permit from the mayor, relieving us from all responsibility, before we allow him to be torn limb from limb. Return to-morrow at two o'clock, and if this man's courage still keeps up, you will see before your shuddering eyes an encounter which will make the historical gladiatorial combats of ancient Rome pale into insignificance.' I could sling a few language myself, those days, and the mayor was a friend of mine—or I thought he was—so I figured we could catch the suckers for an admission and then call it off, because he would refuse a permit.

"Blank cartridges fired in his face."

"But he was onto the game and he was one of those blame fools who thought he had a

"Five hundred dollars to anyone who will enter the cage."

sense of humor, so he gives him a document with a big red seal on it which looks like a doctor's diploma, which says that Thomas Jefferson is allowed to go in and win our five hundred, and the next day the coon shows up smiling and ready, and I knew we had to make good somehow. I passed the word to Merritt to delay the game and make a last grand effort to throw a scare into the coon, and he put up a spiel to beat the band.

"'This terrible Fuzzy Wuzzy has none of the attributes of a human being,' says he. 'He lives upon raw meat and would prefer human flesh if he could get it. Observe the expression of ghoulish glee in his eyes as he regards the foolhardy man who will soon furnish him such a meal as he formerly enjoyed in his native jungle. He sleeps at night suspended from the top bars of his cage by his claw-like hands and feet, which will soon be tearing the flesh of this man who stands before you now, a picture of perfect health and strength. He speaks no intelligible language, but he utters howls and yells, which will be more horrible than ever before when he is sucking the warm heart's be-lud of the figure which you see before you for the last time in human shape.' Just then the super gives Fuzzy a prod and he howls like Balaam's ass, but the coon stands there smiling and not feazed a bit.

"'It's a sad sight,' continues Merritt, 'to see a fine man in the prime of life, like our colored brother here, crushed into an unrecognizable mass by the terrible hinder limbs of this man-eating cannibal and then torn to shreds by his horrible fangs. The management of this highly moral and intellectual show will provide a funeral for the remains, if there are any, and now, ladies and gents, I call upon you to witness that we are not responsible for the terrible end which awaits this reckless man.'

"I had taken the precaution to button up the box office 'take' in my inside pocket, and while Merritt was making a bluff at looking for the key to the cage door I looked around to see that there was a free exit, for the coon was standing there swelling out his chest and grinning as if he had the five hundred already in his jeans, and I knew he couldn't be bluffed out. Just then a typical antebellum Missourian, one of the

kind that has to be shown, steps up in front. He was tanked up until his safety valve would have blown off if it hadn't been wired down, but he was pretty steady on his pins when he held onto the railing in front of the cage.

"'Professah,' says he, 'Did I undahstand yo' all correctly to say that this yeah object in the cage has none of the attributes of the human race?'

"'Correct!' says Merritt, glad of an excuse to delay things. 'He is lower than the beasts of the field.'

"'Well, he suttenly aint much to look at,' says the Southerner, looking him over carefully. 'He won't eat like folks—he can't talk—an' he sleeps like a bat. I dunno why such a pusillanimous critter should cumber the yearth,' and with that he puts his hand to his hip and pulls out a forty-five from under the tails of his coat. Fuzzy takes one look at it, and it didn't need any prodding to make him holler, and he tries to tear off the false tusks.

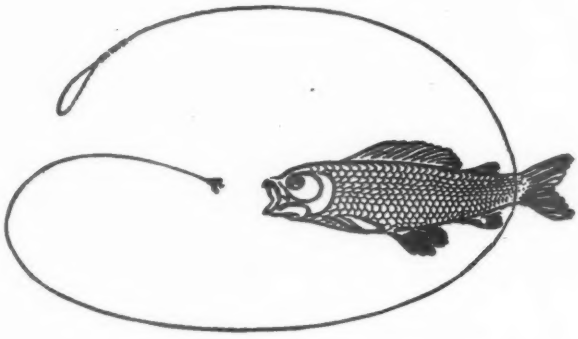
"'Foh Gawd's sake, mistah, doan shoot!' he yells. 'Dat white mahn's been tellin' a passel ob lies about me until ah's sartain suah somefing gwine fer to git me. Ah can eat an' talk like anyone, an' mos' ebery one knows me about yeah wen ah aint got dese yeah contraptions on.'

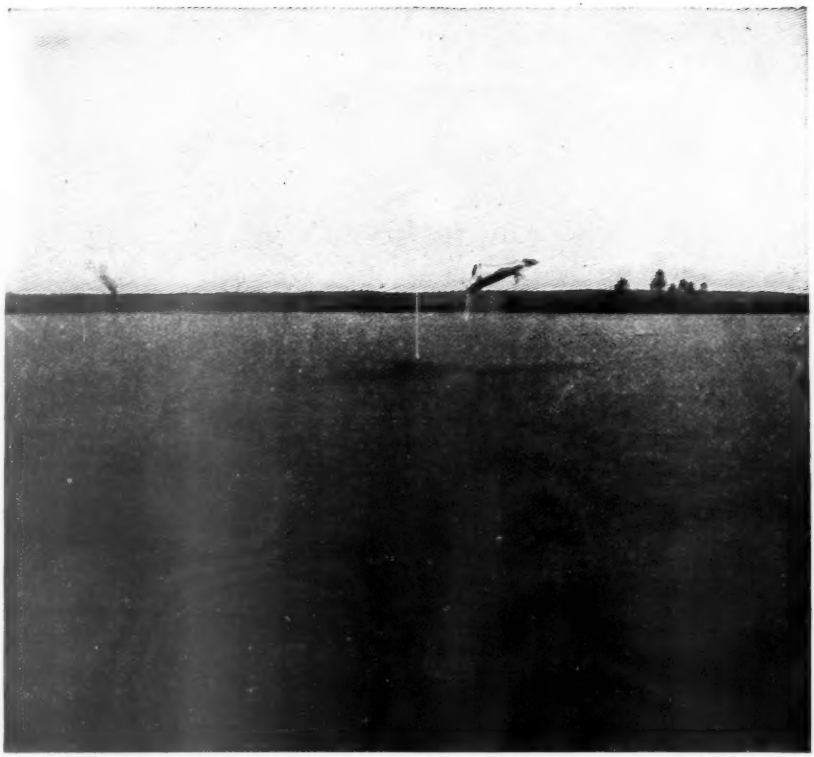
"'Shut up, you blame fool!' says Merritt. 'He won't shoot you.'

"'Mebbe he knows dat, mebbe you knows dat; but how does I know dat?' yells Fuzzy. 'Dat gun suttenly looks big to me.'

"About this time the other coon got wise and saw the five hundred vanishing, and the last I saw of Merritt he was trying to break a half-Nelson that the coon had got on him and dodge the rest of the crowd at the same time. I left St. Louis on a freight that night, wearing a few lumps where some stray brickbats landed, and the next time I saw Merritt was in Chicago, and he was on crutches and had his head covered with plaster."

No thunderbolt dropped from the blue dome over the Dreamland tower, and the proprietor, with a childlike and bland smile on his face, motioned to the waiter to refill the glasses.





A six-foot tarpon ten feet above water—through a magnifying glass it may be seen that the pectoral fins are closed as you would fold your arms.

THE GIANT OF THE MEXICAN GULF

THEORY OF BAIT

By EDWARD H. HUDSON

PHOTOGRAPHS BY E. H. R. GREEN

AS the flight of ducks and geese southward heralds the coming of winter into the southern climes, so does the return of the deep-sea tarpon to the Gulf shores give advance notice to the fishermen who dwell along the coasts, of the arrival of spring.

The month of March had been wild and stormy and had gone out like a lion. According to the weather prophets, spring was behind her scheduled time. For many April days "Ole Tony," the bent and grizzled Swede-Hungarian boatman, who was master of the Tarpon Club boat-house, and who for many years had held undisputed sway among the fisher folks as the champion "puller" of the island, had been growing more and more restless.

Every day as the tide came in he would walk out along the landing, and shading his

Just coming up for a spring.

eyes from the glare with his old cap, would scan the broad, blue expanse of rolling, surging waters, long and anxiously. He was watching for a sign more infallible than any that governed the issue of the weather bulletins. One day—it was near the middle of April—he stood looking out across the sea as it gleamed and glistened in the morning sunlight, and as he gazed, he saw tiny, star-like, silvery sparks darting up from the surface of a wave. He gave a quick start, bent forward, shaded his eyes again and looked more intently. "Tarpum 'mong dem mullets, sartin," he muttered. Again the school of mullets, like a cluster of glittering, vanishing meteors, shone above the water, this time nearer, and then there was a swirl of water and a sudden flash of light as a long, graceful body, from which reflected rays of brightest silver, leaped forth from the sea, and then another and yet another of the "*Grande Ecaille*" rose, graceful and radiant, above the blue water. The "silver king" had returned to his summer home to feed and raise his young. The old boatman waited to see no more; hastening to the club-house, he called out, "Tarpum come! Me seed 'em! Goot feeshin 'morrow!" and he was off to the boat-house.

A dozen years ago our stock of knowledge relating to the tarpon, or tarpum as it is sometimes called by sailors, was very limited, and practically nothing was known of it as a game fish. It is only within the past five years that close, accurate and systematic study has been made of its nature and habits, and even yet our knowledge is far from complete; there remain some doubts to be cleared away concerning its winter habits and home; and there are some disputed points to be settled among anglers in regard to the most successful and sportsmanlike manner of taking.

Tarpon fishing had been engaged in to a limited extent in the waters of the Florida shore for a number of years in a precursory way, but it remained for Mr. E. H. R. Green to conceive the idea of organizing a Tarpon Club, making original investigations and giving the tarpon its deserved place on the list of game fish.

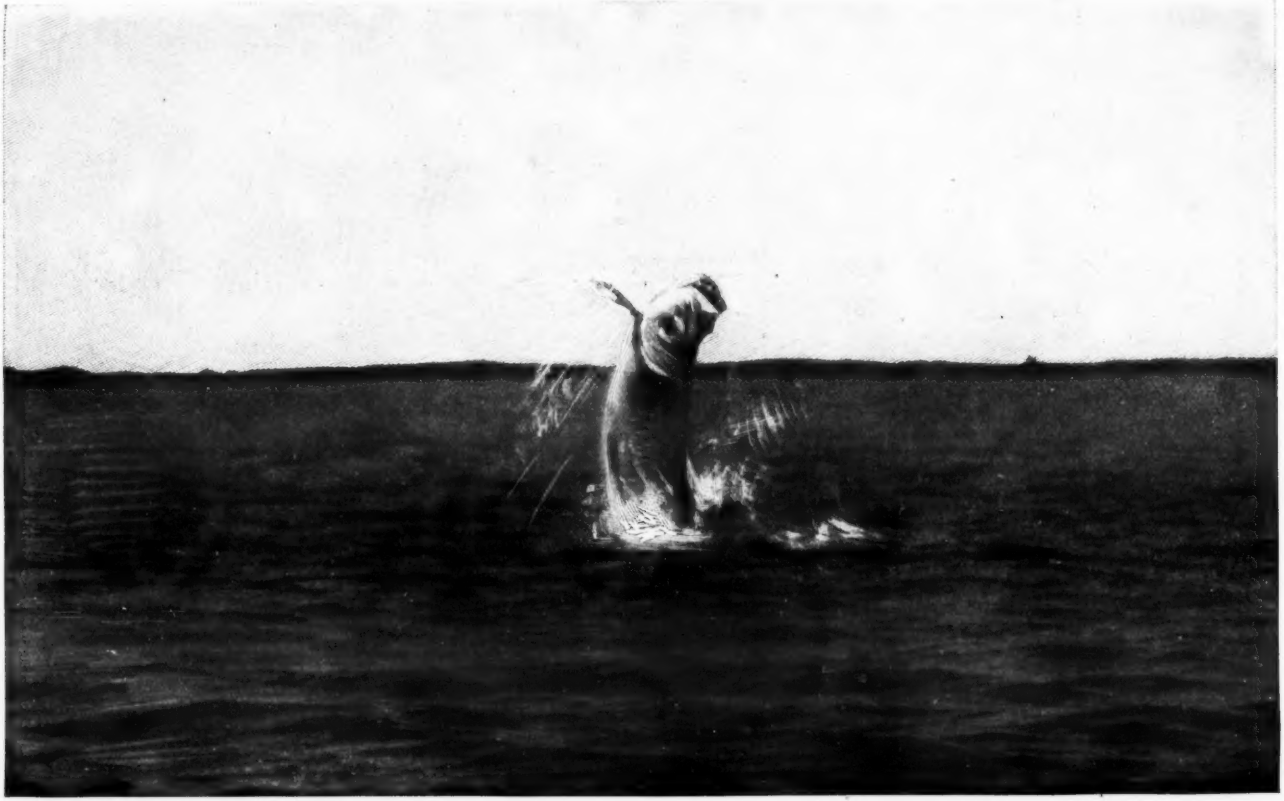
The site chosen for the club house was the little island of St. Joe, which is thirty miles in length and in width varies from one to three miles, being off Rockport. Its eastern shore is washed by the Gulf of Mexico and its western beach is swept by the swift and treacherous currents of Aransas Bay—a narrow strait separating it from the mainland of Texas.

It was stated in a book on fishes published in New York in the year 1884, that no man was strong enough to hold a tarpon unless provided with some kind of drag or buoy attached to a hand line. In the light of recent accomplishments in tarpon fishing this statement appears to have been made without much observation or foresight. A tarpon over six feet in length has been taken at the Texas Club by a boy under thirteen years of age, and another as large by a woman weighing less than ninety pounds. Mr. Robert Grant, in 1896, said that no less than one hundred tarpon had been taken with rod and reel. So we see that tarpon fishing was yet in its infancy in 1896. In the "Encyclopedia of Sport," published in England in 1897, it was stated that at that time something like two thousand tarpon had been taken, the largest of which was 7 feet 2 inches. During the first season at the Texas club, according to its official bulletin for the year, two hundred and forty-two tarpons were landed by members and guests of the club. The catches to date number 2,961. The shortest time made in a catch, according to the records, was ten minutes, and the longest six hours. The largest catch to date was made by Mr. C. W. Dawley, of Dallas, Texas: it measured 7 feet 10½ inches and weighed 175 pounds, girth 42 inches. The smallest catch was in length three-fourths of an inch and weighed 17 grains.

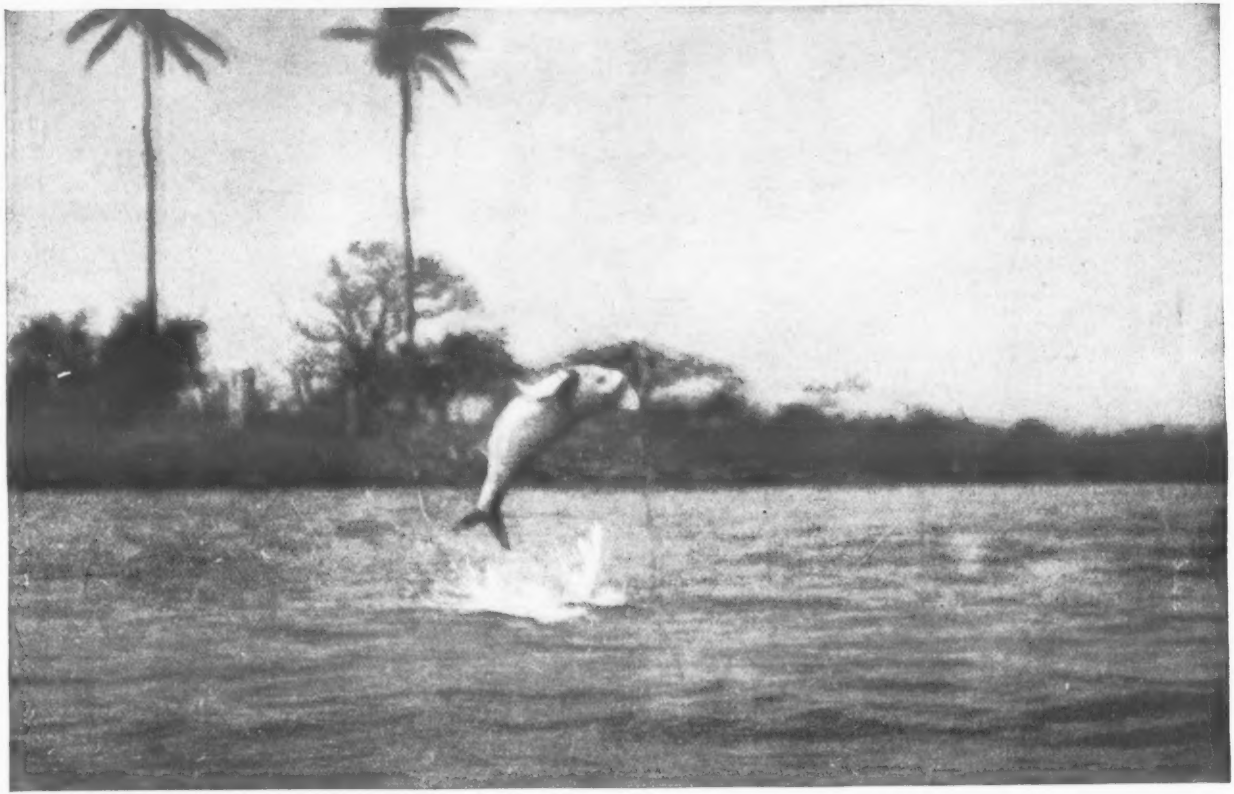
The tarpon (*Megalops thrissoides*) has all the qualities that go to make up a game fish. It belongs to the family *Elopidæ* and to the sub-family *Megalopinæ* or *Megalops atlanticus*. In appearance it resembles the big-eyed herring. In form it is elongate and compressed. In length it sometimes reaches 8½ feet, and in weight ranges from two ounces to two hundred and fifty pounds. One under eighteen inches has never been taken with a hook.

The largest catch is determined by the fish's length and never by its weight; the reason for this rule being that the female is heavier and less active than the male. The male, though not so heavy, has larger fins and a stronger tail and is therefore swifter and a harder fighter. A female weighing

Still farther out of water for the leap—notice the pectoral fins closing.



Still going up—the pectoral fins closed.



Entirely out on the upward spring—turning for the dive.

two hundred pounds is as easily taken as a male weighing fifty pounds less.

The tarpon is covered with circular scales of some horn-like substance ranging from one to five inches in diameter; the exposed portion of the scale is a brilliant argentine, and looks as if it might have been laved in a silver-plating bath; the unexposed part is of a dull yellowish hue. The sides of the fish present the appearance of burnished silver, which merges gradually into a greenish-blue line, extending from the back of its head along its back which gleams with purple and iridescent tints like mother-of-pearl. After having been out of the water a very short time the brilliancy of coloring disappears to some extent, consequently it has proven a difficult matter to paint the tarpon accurately. To the writer's knowledge, this has been accomplished only once, by an artist who was ready with his colors and brush as each tarpon came out of the water; forty tarpon were taken before he finally produced the correct colors.

The tarpon has the ordinary gills, and in addition, is supplied with two small holes in the top of its head, connected to what may be likened to a pair of lungs, from which it often blows on coming to the surface of the water. Behind the usual dorsal fin there is a long triangular, bayonet-like fin, the use of which naturalists have never satisfactorily explained. The tarpon is occasionally found as far north as Cape Cod, and as far south as the northern coasts of Brazil, but it is most common in the warmer waters about the southern coasts of the United States, in the Indies, and in the Gulf of Mexico. They are found in great numbers along the Texas coast—now considered the finest tarpon waters in the world.

The Gulf fishing season begins immediately after the last "norther" has swept down from the snowy heights of the Rockies in the spring, and continues until the first cold wave in the autumn warns the tarpon to seek deeper or warmer waters for his winter home.

The regulation tarpon tackle consists of a lance-wood rod of the strongest fiber, preferably in a solid piece, well shaped and heavy, from 6 feet to 6 feet 6 inches in length; a strong quadruple reel fitted with a brake of tough rubber, the leather brake of the new reel having been thrown away; a large hook of strong steel or English bronze with a point turned in toward the top of the shank, so that it will be driven straight in and not sideways when you strike; it should have a strong, keen point, and a short barb, that it may enter and hold in the bone-like cartilage of the tarpon's mouth; the hook should be attached to one hundred and fifty or two hundred yards of Hall's No. 27 linen line with a snood of strong, steel piano wire in which are three or four swivels, experience having demonstrated the superiority of this snood over all others. Good sized, live mullets are used for bait, hooked through the head. Being unable to swallow the mullet tail first, because of its fins, the tarpon as it takes the bait jumps, turns the mullet head first, and in taking it is hooked in the mouth or throat. It is at this time that most fish are lost because of nervousness or undue haste; the line should never be drawn taut with a stiff rod on a leaping tarpon, for the weight of its writhing body snaps the line like so much thread; wait until the fish starts down with its bait and then strike, and strike hard.

In the matter of bait the Texas theory differs from that held in the Florida waters, where still-fishing has been much engaged in with dead, gorge bait. The Texas theory favors live bait, because, as claimed, it is more exciting and sportsmanlike. Taking live bait the tarpon is hooked in the mouth, puts up a longer and harder fight, and has greater chances for his life in the struggle. Members of the Texas club never bring a tarpon to gaff and the fish is never killed unless for the purpose of mounting. The attempt to place a live tarpon in a boat has proven a very difficult and dangerous undertaking. Having battled out his life among the storms and breakers of the Gulf of Mexico, the fish is, of course, strong. Even when exhausted by a long struggle, a single lash of its powerful tail may knock a side out of the boat or break a man's leg. It is therefore deemed preferable to tow it to the beach, where, after measuring and weighing, if you do not desire it for a mount, you order the "puller" to unhook it and push it back into the water. A catch is never recorded unless the fish is landed on the beach.

It is always to be borne in mind that tarpon are usually found and bite most readily when following the shoals of mullets, on

which they feed. The mullets, as a rule, follow the currents of the tide, so the tarpon are found coming in with the tide and going out with it. If hooked when the tide is coming in, the tarpon can be towed to beach more easily than it can when the tide is going out and the current is against you. Sometimes the heavy rowing skiff is towed by the tarpon far out to sea—so far that it would require a marvel of physical strength and endurance to tow the fish back to beach. To land a tarpon requires a steady nerve, physical endurance, patience, a knowledge of the fish's habits, and a good "puller" who understands the business and knows the currents. The absence of any one of these requisites may lose you your fish, and cause you much discomfort, possibly danger. See that your reel is lashed on strongly, that your line is wound on smoothly; a loose band on the reel or a tangle in the line will result in disaster. Suddenly, your "puller" grasps his oars and points to the right. "Dem mullets, tarpum comin', put out dar." As he talks a shoal of mullets dart past the boat. There is a swish and swirl of water and a storm of spray almost in your face, and in its center a flash of purple and silver; a tarpon has dashed almost into the boat, intent in his pursuit of dinner. Out goes your bait, for you are told that others will follow in its wake. The boat draws off a little to the left and you wait. The boat stops still; yonder is a swirl on a wave and a great, dark body, with a greenish back and large projecting fin appears above it; it is a breathless moment. "Look out dar," yells "Tony;" there is a splash about thirty yards away, your line becomes taut and is gliding out like lightning before you can apply the brake. When you do it is almost jerked from your grasp and simultaneously the tarpon leaps and writhes above the water again. There is no sight more beautiful to the angler than the graceful, silvery form of the tarpon, like a gleam of light from darkness leaping forth from the green sea. That moment when the tarpon has the bait and you strike is the one of all others most fraught with intense excitement. It is the first crisis in the battle. He is down again and your hook holds. He darts back and forth, ever going deeper in his wild rushes. It is an earnest fight. The first ten minutes seem like an hour. "Rush 'im reel up, don't let rest;" following the advice, your arms tire, your hands become numb, it may be, bleeding and blistered, but you save your fish. Thus you are towed out toward the sea, always fighting. In his first mad rushes the huge fish gained on you, taking out nearly one hundred yards of your line. During the first half hour he has decidedly the better of the fight and keeps most of the line. During the second half hour you gain the lost line foot by foot, and the honors are about equally divided. Now the long rushes and leaps begin to tell and he loses wind. If he did not help to kill himself by these wild rushes and leaps, you could never land him. By some kind of intuition, an angler can tell when he has gained the mastery over a fish. You feel instinctively that the second crisis has been passed and the boat turns back toward the beach; and as the beach is neared you reel in and fight at close range.

Once he dashes almost up to the boat and suddenly turns about; you nearly lost him that time. You soon lead him back, however. Now he lies near the boat; you see his gleaming side glisten in the light. "Stiddy now," says your man, as the boat touches the beach; you climb out and, resisting his last waning strength, as he lashes spray upon you, pull him out upon the sand, and the fight is won.

The gun camera with which these photographs of leaping tarpon were taken.

THE SCOOTER—A WINGED TOBOGGAN OF LONG ISLAND

By J. W. MULLER

PHOTOGRAPHS BY JAMES BURTON

STANDING that January morning on Long Island's southern mainland, whose sedgy surface never freezes so hard that it will not sob under foot, a man might look out over the still inland sea of the Great South Bay and beyond it over the white ocean beach to the sharp, dark curve of the unfluttered ocean, and see spring in the world. Frozen fast from shore to beach, from farthest cove to mumbling inlet, the air that crept over the bay was yet so soft, the sky that hung over it so innocently blue, that it seemed as if the marble sheet must surely disappear before another morning.

Three miles away, in the heart of the serene, stiff plain, lay a black furrow, bent in many curves. In it, with main and foresail drawing gently full, a schooner worked toward open sea to escape the ice-lock that had held her for a week. Careless eyes watched her from the mainland, from miles of sleepy marsh, idly desiring to be on her, close hauled for the unrippled Atlantic in that midwinter, summery gentleness of day. Other eyes watched her too; eyes set in keen, hard-lined brown faces, where the life savers of Fire Island regarded her. They saw what the landsmen could not see; what, indeed, only eyes as sharp as the clear gray eyes of gulls might catch—that the baby blue of the cloudless January heaven had a dull shine of hard steel where the sea dipped. They saw, too, high in air, wide sails careening in a steady flight toward shore. The gulls were coming in, long before noon, not pausing for the feast that the lowered tide had spread on the open beach.

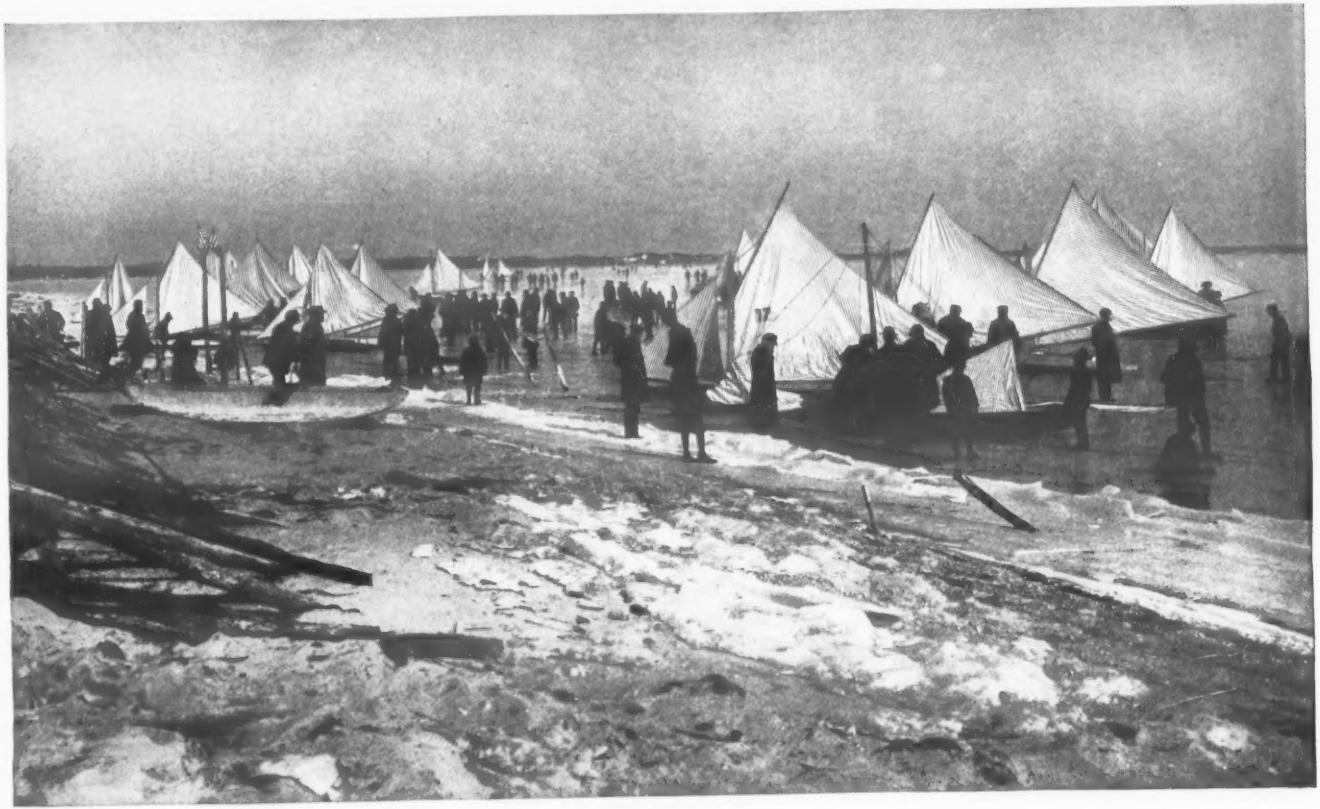
Down in the unseen, sunken sea beyond the horizon, straight east as the parallel of Fire Island's latitude runs, a wind was being born—a cold wind and a great wind. It was drawing in with the young flood, moving with its motion, growing with its growth. When the tide was full, the sea wrinkled and began to move. On the frost-feathered edges of the ice inside of the inlet, a little surf began to run. A mile of ice whimpered. Faint, vague sighs fluttered over the wide plain. Under the floes, the tide turning to run back to sea, strained its green back. Floe moved against floe, creaked, snapped and receded. Again they met and drifted apart. Once more they struck, grinding, and stayed.

The schooner ran no more in an open lane. Her channel had become an archipelago of ice islets, changing each moment. She tacked, and a field, breaking suddenly adrift, shouldered into her course. She lay on the other tack to pass between two floes, and, before her sheets were taut, the two were one.

The beaches drummed. Beyond them, the red sun shone on a running sea. The wind strove hugely to turn back the lusty tide, and the two battled, with ice floes for weapons. Astern of the caught schooner, the secret tide coaxed a floe that bobbed toyingly. Softly it floated, softly it swung under the vessel's counter, with clear splintering sounds it shivered into bits. And at that purring touch, the wheel twirled crazily with its rudder bitten off.

Down went the starboard anchor. It fell on ice and pressed it under, but a fathom deep the floe held, and buoyed up the half ton iron. Out roared the port chain and found mud. But the ice had the schooner. When the chain veered out, the bottom gave way to the pull, for it was not a schooner alone, but an acre of moving ice that pulled at it.

The straining sails spoke, thundering. But louder than they, spoke the inlet—*one!* TWO! THREE!—the tide backing against the wind and cascading on the bar. Even as torn hands pulled in the stiffened drumheads of canvas by main strength, the vessel struck—once with just a dainty scrape and a velvety glide over soft, soft sands,



The fleet of scooters on the Great South Bay.

yielding kindly; twice, with a weary, squatting wallow; thrice, with a smash that shivered to her mast-heads. Below, there came the trill of little water flowing musically. Her timbers had started, and the Atlantic Ocean was coming in to see what manner of thing this was.

Now here was such a shipwreck as the winter sea loves, with a scene set cunningly to torment its victims before it took them down; for around the bursting schooner lay too much ice to launch a boat, bu were men to creep out on it, they would be met by encompassing hungry water; cold and deep and black.

The staunchest life boat on all the American coast, from Cape Fear to Montauk, could not win through the wicked mass. Yet, from the white dunes of Fire Island, something was coming to help. Little things they were, detaching themselves speck by speck from the beach where the Life Saving Station sits; so little that the lonely figure of the occupant of each loomed up like that of a man sitting on a child's bobsled.

Pitiful things were these to play at taking the place of the mighty lifeboats; neither as large nor as deep as a ducking skiff, and set with a mast scarcely higher than a man. But they came with the speed of the blast itself. Scarcely seeming to touch the surface they skimmed a smooth stretch, with a clinking ring of metal on hard ice.

In their course lay a long mile of hummocks—two and three feet high, cast in rough confusion. Straight at them went the little things, mounted them, dipped into the hollows, mounted again and leaped headlong from the last ones to hit the ice twenty feet away—and still to tear ahead unchecked for even an instant by the wild work. Now they hit mush ice, over which surely no thing made of man can go, any more than things can go through it, for it is too thin for the one and too solid for the other.

Churn! churn! churn! The mush spouts off the bows, and on they go, unhindered, with ice crystals and water spraying high along each side. Out of the mush they spring more easily than ever gull rose from the water, and with a crunch take the hard ice again and speed on faster, faster. But now they are surely doomed! Ahead of them lies black water, five hundred yards across, and they are pointing for it straight at twenty miles an hour and not a hundred yards to make before they leap in and are engulfed!

In they go! White water smashes over them. But instantly out of the froth the little sails wimple and skim on, undeviating. They hit the ice bank on the other side plumb and do not stop, but slide up on it as a wet seal slides on his floe. Again they take hummocks, almost leaping from top to top of the rough crests. Again they take hard ice, brittle ice, mush ice, ice five feet thick and ice that is only a glare over treacherous, lurking water; and straight and true, unharmed and undelayed they sail and round under the stern of the broken ship.

Next morning her sticks and splintered timbers make dismal black dots along five miles of ice field, and the surf makes catplay with her wreckage from Fire Island to Tiana Beach; but her crew sits safe and warm in the Life Saving Station, thanks to the Long Island life savers' contribution to nautical engineering, the Great South Bay scooter—sail-boat and ice-boat in one, and the nearest thing to a wild duck that the hand of man has produced.

Men are "scootering" for sport now, all over the Great South Bay from Babylon to Moriches; but the sport is not more than three years old, and the scooter has not changed perceptibly in model or rig from the original form devised by the life savers for practical and, often, grim work. No doubt the next few years will see a great evolution under the hands of the sportsman, for the scooter is surely destined to become a craft of world-wide use. But at present it still is delightfully and amazingly simple—nothing except a flat-bottomed, shallow boat shaped like a ducking skiff, shod with a steel or brass runner on each side of the flat keel, and sailed with mainsail and jib, the latter being used to steer the craft, as, manifestly, it cannot carry a tiller.

Anybody can build a scooter, if he can build anything at all. Some of the best on the Great South Bay to-day were built by house carpenters. One of the prize-winners in last year's races was built by a stone mason. The boat that came in third in the scooter race of last winter was built by a boy of eighteen, who had not seen or

Rounding the Stake—Showing Method of Steering with the Jib

heard of a scooter before that year. The cost of those in use now ranges from seventy-five to one hundred dollars.

Like the Indian canoe, the Eskimo kayak, the Hawaiian surf-riding boats and the Malay proa, the scooter, fully as unique and original as they, was born of simple necessity.

Those strange salt-water lagoons that extend from New York east along the south shore of Long Island to the sandy Hamptons, present an arctic problem of their own in winter. No boat can cross them, for there is never an unbroken reach of open water. No man can walk them, for there is rarely unbroken ice. No ice yacht can sail them, for there may be a five foot thickness of ice in one stretch and not half an inch in another. The restless tides will not let the bays freeze smooth. Each change of current makes hummocks up-rear that would wreck the ice yacht. Each tide opens wind holes and loosens floes in the channels.

Thus the only mode of winning across the treacherous and deadly surface from mainland to beach, for communication or life saving, was to drag a flat-bottomed boat on a sled, sliding it off at mush ice or open water and poling or rowing till hard ice was gained again, when the killing work of dragging the heavy craft was resumed. Often it required half a day for men to cross the bay. No man could expect to cross without breaking through hidden holes. Each winter took a toll of dead.

To ease the work of dragging the boats, the life savers at last hit on the idea of setting a tiny sail on the craft when the wind was fair. Gradually the sails were enlarged. Then a bright spirit fastened sledge runners directly to the boat instead of mounting it on a sled. And then—all at once one man preparing to cross the bay with a mighty wind behind him, asked himself why he should haul the boat at all. In that moment the scooter was born.

First it carried a wisp of a sail. Men who know the Great South Bay have deep respect for it. They knew what it meant to slip over its ice with a wintry gale blowing fifty miles an hour behind them, and they went carefully. Gradually, as they learned what could be done, the sails grew in size.

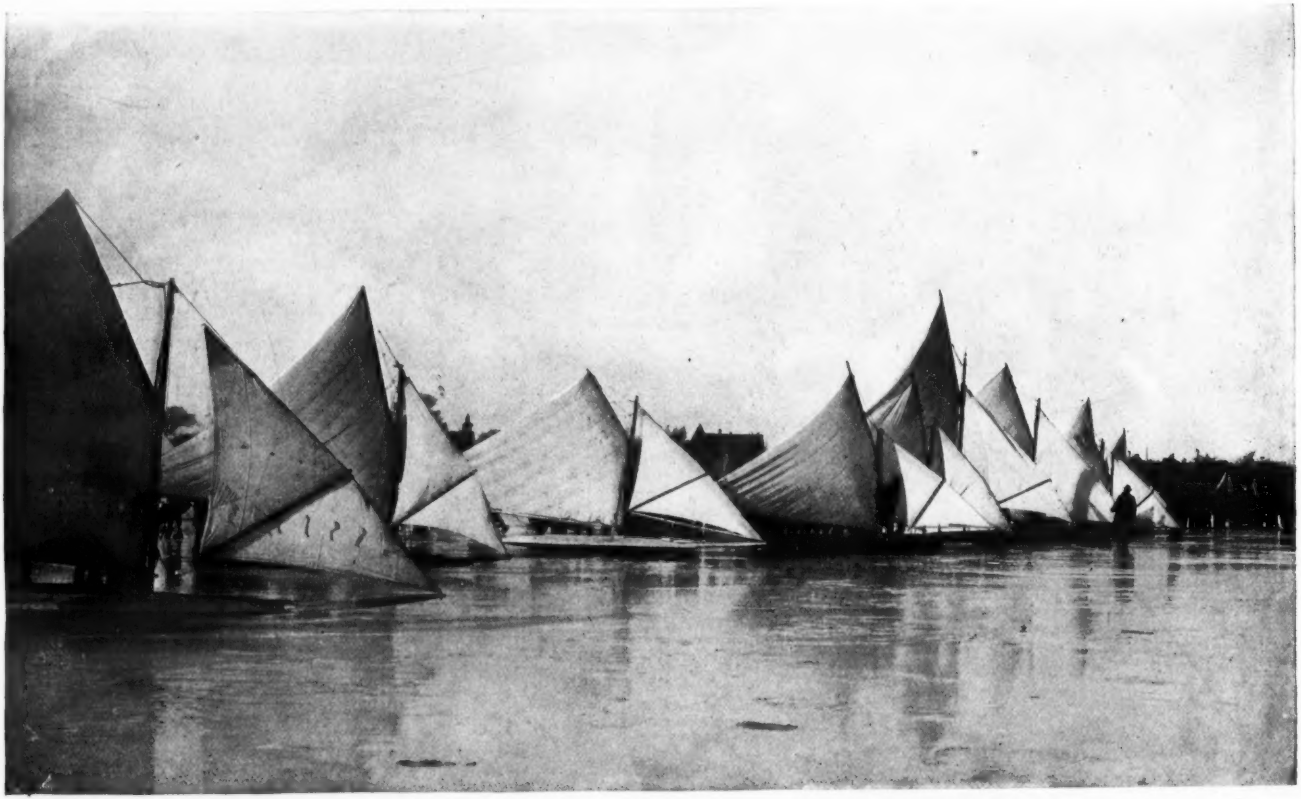
To-day the typical scooter is from fourteen to fifteen feet long, with a beam of four to five feet. It is well decked all around, particularly forward, so that the open space forms a cockpit only five or five and a-half feet long and two feet to two and a-half wide. Around the cockpit runs a powerful combing, built to withstand rough knocks and rising at least three inches above deck. The entire deck has a gentle turtle-back curve, fore and aft and across. This curve of the deck is almost duplicated by the bottom of the scooter, thus making a very slight modification of a flat bottom.

Now come the runners—really the only thing that makes the scooter different from any other boat. They are made of brass or steel. Each has its votaries. The men with brass runners can file them true and sharp whenever they need it, especially before a race, without wasting more than a few minutes. There are conditions where steel runners hold the ice better and again at times the softer brass runners are a decided advantage. On a fourteen-foot boat the runners will be ten feet long, slightly rocker-shaped, one inch wide and from one and a-half to one and three-quarters inches high, being so set and ground as to bevel inwards. They are set about twenty inches apart. It is in the shape, set, and location of the runners that further evolution and perfection of the scooter as a racing machine, probably will come.

The mast, which is set well aft, is from nine to ten feet long. The sails may be rigged in any way customary for small boats. The handiest are the regulation boom and gaff and sprit rigs for mainsails, while it is well to have a small boom for the foot of the jib, because its proper manipulation and set are so important for the handling of the boat. The bowsprit is large and heavy, and projects from two and one-half to three feet beyond the hull. It is made removable, so that larger or smaller sticks can be substituted according to weather.

The sail spread of the scooter differs from that of common craft in that the canvas has its greatest extent laterally instead of in height. The scooter wants as much sail as possible astern and in the bow, because it is the canvas alone that steers her. Therefore, a scooter with a nine foot mast may carry a seven or eight foot gaff and a boom extending fifteen feet and more, although fourteen is the usual length for a nine and a-half foot mast. The leach of such a sail will be fourteen feet or a little more. The

Behind the Line, Ready for the Race.



In Front of the Line, About to Start.

Sharpening the Runners.

foot of the jib will be at least seven feet and the leach about the same.

Most of the boats are built of pine with oak decks. They must be strong, to withstand the extremely violent wrenches and bumps due to the rough work in the broken ice. The equipment consists of a pair of oars and a pike pole with sharpened points. The latter is as vital to scootering as an anchor is to a yacht. It offers the only method by which the scooterer can work his way through bad mush ice if the wind is not strong enough to force him over or through it. It is needed, also, to bring the scooter around in extra heavy weather, in case the steering power of the jib should not be sufficient to do it quickly, or the sailor lose control of his craft temporarily, a contingency that is likely to happen with bewildering suddenness in the case of a two hundred pound craft with a forty mile wind behind projecting it over ice smooth as glass.

It is wonderful how well the jib steers the scooter, however. There being no tiller to demand the care of the sailor, he can handle his jib and mainsail alone and thus make them work in perfect harmony. Let go the jib sheet and haul taut the main, and the little boat will come around as sweetly as any deep-finned yacht minds her strong helm. She will reach and beat into the eye of the wind, and her runners will not make more leeway than most centerboards. If she is to come up in the wind in a particular hurry, the steersman steps swiftly toward the bow so that his weight makes the bearing fall on the keel forward, and the lightened stern comes right around. Thus, by nice adjustment of weight and close manipulation of sails, the scooter can be made to turn in her own length—spin around like a top. Practically, the man who can sail any small boat really well can sail a scooter. There are lots of "wrinkles;" but there is only one radically new thing to learn, and that is a queer one.

The scooter's poorest point of sailing is running free before the wind. Indeed, to be precise, the scooter can't sail at all before the wind. The moment the mainsail blankets the jib in a following wind, the steering power is totally gone.

The only way to sail a scooter before the wind is to beat down it. You've got to tack before a wind with a scooter just as you have to tack into one.

One or two make her crew. She can carry three, but it is better to have less. When she darts over smooth ice, the men perch on the combing aft to windward, as they do on catboats. When she nears rubble or hummocks, or prepares to dive into mush or water, all hands stand up, to relieve her of dead weight. To enter open water, she is driven straight at it. That is the time the hand at the "helm" must know what to do with that jib. Should she take it sideways, over she'll go. She must hit it true and be eased as much as may be by cunning play with the mainsail. Once over the first wild careen of her plunge, which is almost identical with the gliding plunge of a "shoot-the-chutes" boat, she skims the water as neatly as she skims the ice. When approaching solid ice again, she must be headed straight into it. Her flaring bow goes up its edge, and if she has arrived with speed, she has slid up on it and is off again on her runners before you know it. If the wind is too light to drive her forcefully enough, she may have to be helped up with pike pole, or with another and unique implement specially devised, which looks as much like a hoe as anything.

Although the scooter has been in use for many years among the baymen and particularly the life savers, it was not until the winter of 1903 that its use for sport had become great enough to justify an attempt to sail a regular, organized race. On February 12th of last year the first really big race of this kind was sailed off Blue Point. Fourteen boats were entered. The course was a triangle, two miles to a leg, sailed over three times, making eighteen miles in all.

A Patchogue scooter, *Leader*, won the first prize, making the eighteen miles in 39 minutes, 38 seconds, thus sailing at the rate of twenty-seven miles an hour. This scooter was large, being eighteen feet over all, and five feet beam. Her sail spread was thirty yards of thirty-inch-wide canvas. The second boat, *Vamoose*, made her trip in 46 minutes, 41 seconds. She was fourteen feet, 6 inches long, four feet wide, and carried twenty-five yards of thirty-inch-wide canvas.

Better time than this has been made by scooters in stiff weather. In 1903, Albert Latham, a gold medal man of the Blue Point Life Saving Station, made five miles

in six minutes, which would have been fifty miles an hour. But that speed is exceptional. The best scooters do not make more than thirty miles an hour at present under good conditions, and twenty-five miles is more usual. But who would sniff at the idea of skimming across ice, hummocks, mush, and into and out of open water, and over any old kind of surface at that rate of speed on a bright winter morning?

Accidents haven't been common, despite the great speed. A few "scooterers" have been capsized when diving into the water, and more have sailed their craft off the ice into the channel only to discover too late that they had a leak aboard as a silent but active passenger.

Thus two famous ice yachtsmen of New York "scootered" out of Bayport in January of last year with two young ladies. The scooter struck an air hole, and when she went into the water, she developed a leak. There was sunken ice under her keel, and it would have been easy to pole her to the ice-bank, but the good pike-pole had been forgotten. Finally the two men had to get out and stand in the water hip deep, to support the boat till help arrived.

But these accidents are rare; and against them stand the records of many lives saved by their aid. That they will live through a mighty gale was proved last winter when the schooner *George B. Cromwell* struck on the outer beach across from Bellport. So fierce was the storm that the lifeboat was thrown back, bow over stern, time and time again, when the men attempted to put her through the surf. Although many lifelines were shot over the wreck, the seas that washed her were so vast that her crew could not crawl to a single one, although they knew that to reach them meant the difference between life and death.

She struck at midnight. At seven o'clock the next morning nothing was left of the sturdy vessel except "kindling wood"—a term used so often that it has lost its expressive meaning, but that was just what the raving sea made out of the big schooner in seven hours. In the very midst of that gale, Lieutenant D. F. A. De Otte, Assistant Inspector of the Life Saving Service, crossed the Great South Bay from Patchogue to the scene of the wreck in a scooter, driving through everything from rolling open channels to steeley ice. He arrived in time to direct the rescue of all of the crew who were not washed away when the tide finally went down and the life savers could get their boat out.

Last winter saw the first extended scooter voyage, when Seward S. Wicks and Charles Gill, of Patchogue, sailed over the ice from that point to the head of the Great South Bay and thence on through East Bay into the Peconic Bay, finishing at New Suffolk, a round trip of almost one hundred miles. They returned with the information that their visit showed the "East Enders" for the first time what a scooter looked like.

That is a queer thing about the scooter. A few miles east or west of Great South Bay the craft is hardly known even by reputation. Yet the ice in front of Patchogue has been like a picnic ground for the past two years. Every variety of craft cruises its surface. Patchogue boys, awakening suddenly to their opportunity, have rigged sails on dry goods boxes and mounted them on runners. The owners of the heavy square wooden scows, used to transport oysters, mussels and ice in the summer, slide slowly and majestically along, under their lofty sails. Old flat-boats, with scrap-iron runners fastened to them, rasp around merrily, the occupants having almost as much fun as the sailors of the trim real scooters, which flit like white fairies everywhere, and dart in and out of even the most crowded spots with the ease and swiftness of birds.

But the Long Island bayman is slow to believe and slow to change. Only a month ago a Jamaica Bay oyster-man looked at me with quizzical wrinkles around his eyes when I said something to him about scooters.

"Scooters, eh?" said he, spitting with loving care at a piece of driftwood. "Scooters! And they jump off the ice into the water, do they? Well, well! What a lot of things there be on land and sea that a feller never would hear of at all if he didn't associate with any except them that tells the honest truth."

CAMPING OUT WITH AN AUTOMOBILE

HOW TO MAKE A ROAD MAP—THE CAR AND ITS EQUIPMENT—THE CAMP KIT AND HOW TO PACK IT—SPORT EN ROUTE

By HROLF WISBY

THERE is as much difference between touring in the ordinary way, and camping out with your machine, as there is between a stroll down the avenue and a cross-country tramp. Everybody is familiar with touring in its usual aspect, but few know anything about camping out, and still fewer attempt it. A little experience and a good deal of forethought will enable you to "live with" your auto and make a decent showing, even if you don't combine the qualities of a woodcraftsman and a scout. In a little while you will want to be distinguished from the mere tourist, as the voyageur from the ordinary traveler.

Automobile camping stands apart from any other branch of the sport. It is neither touring nor racing. It is modern man brought back to Nature on the latest vehicle of civilization. It is closing in an embrace with mother earth, yet not locked with her in the compass of a day's slow tramp, but free to roam, to camp, and to change your ground at will, to surmount the obstacles of the open country, to annihilate the wearying consideration of time and distance. It is terrestial man gifted by an almost aërial mobility—a gift of his own ingenious giving, even more remarkable than the nomadic roving of Beduin sheiks.

The first thing to do is to select your route carefully. The chart will not tell you everything. Some judgment is necessary to map out the probable daily mileage in advance in order to reduce the area of desirable camping ground for each day to the smallest possible radius. The actual picking of the camp must, of course, be done on the spot. Nevertheless, it is convenient for the chauffeur to know when he is traveling over favorable ground for this purpose, and no special facilities are required to make this advance knowledge accurate and reliable.

Most of the big automobile clubs the world over publish good maps, and the topographic charts of the various States are of great aid in judging the lay of the country.

With this equipment, which can be absorbed in any large library, you can construct a set of handy maps for use when under way. Take a good, plain geographic map. Place over it a transparent tracing-paper, say of an "onion" finish, and thumb-tack the corners. Trace with black ink the rivers, railroads, towns, etc., of the country you wish to pass through. Trace with red ink the route you decide to take in passing through. Then take a topographic map and trace, in the same manner, mountains, hills, elevations and valleys; in short, the build of the land you are to enter. If your tour includes travel in but little known regions of this country, provide yourself with a tracing of a survey map such as the U. S. Geodetic Survey issues, which will give you what accurate information is available in advance. The data gleaned from these three maps should enable anyone to make up a driving chart, its object being to show at a glance the combined information contained in all the other maps. To be practical, such a chart must be simple—a sort of ready-reference résumé of all needed road and camping information. Stake out your route in a heavy, red line. Everything that crosses this course is of more interest to you than what runs parallel with it; hence, note all railroad (----), highway (——) and river (....) crossings, towns (C), farms (O) and wayside houses (X). Note only unusually high grades and low drops of the road, thus: Gr. 30 per cent. or Dr. 20 per cent. The topographic maps will give you every boulder, peak and bush in the country, but all you want to know is, "How long does this forest I am traveling through continue?"—or "How long must I camp in this treeless country

before I strike woods and shelter?" Forests, and even the nature of forests, is easily indicated on the map by various symbols (¶ † or ‡), but instead of massing them to show the size of the forest, as is usual, simply draw the outline, say, for a pine forest with symbol (†), for a hardwood copse with (‡), and for miscellaneous woods with (¶). A carefully planned map will give you a correct idea not only of the route, but of how far you must travel to obtain the best available camping ground before night.

The size should not be larger than an ordinary handkerchief, and after pasting the map on chart canvas it should be rolled around a paper or wooden cylinder, placed in a waterproof box with a glass pane, so that the chauffeur may have it continually before him and turn the cylinder as he progresses over the route shown on it. This arrangement will obviate that most wearisome operation of a long-distance trip, of having to stop to consult maps—a very exciting performance when it rains or blows—or to consult "people you meet," who, as a rule, don't know any more about the country they live in than the average New Yorker knows about New York. There is not the slightest excuse why a chauffeur should not know, for his particular purpose, as much about the country lying in advance of him as a military commander for purposes of seeing an army through.

Next comes the choice of a proper vehicle, which for an extended trip of this order, had better not weigh much more than half a ton. If the party numbers eight persons, two 1,200-pound cars with one horse-power behind each one-hundred pounds, and each carrying four passengers, would be far more preferable than a big high-power car of double capacity. Not only will the traveling be more commodious, but in case of breakdowns or accidents, the uninjured car can tow the other. The cars should be of the same model and make, so that the spare parts and accessories carried can be used to equal advantage for both.

For summer travel a tarpaulin roof on a frame, supported by four stanchions, and with side curtains, would give you entire protection from sun heat and rain showers. The same arrangement can be used for winter travel with an addition of a windshield in front. It is better to have the shield made in two sections, and folding vertically in the center, so that both panes are placed at angles with the wind pressure, in which position they are also better protected against the shocks of a jolting and jumping car front. Personally, I am in favor of no protection overhead or in front, for the most scorching sun that ever shone can be defeated in a Japanese palmetto hat, a suit of karki, and the wind pressure of the ordinary touring gait, while proper fur clothes, hood and face-masks will enable anyone not too enfeebled to face the blasts of a winter storm. The leather upholstering of the car will not suffer the least from an extended tour if well-fitting covers of enameled oilcloth are used. Less than two dollars' worth will protect every square inch of leather in a tonneau car. Dirt, mud and dust is readily removed by a few wipes with a cloth, or the covers, which are entirely waterproof, may be cleansed in a brook, and thus you are always sure of a clean and sanitary seat.

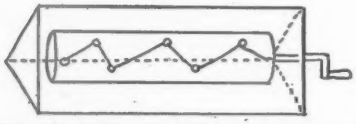
Besides the usual outfit of tools, spare parts, tires, etc., for making wayside repairs, an auxiliary kit is required to make camping possible and comfortable. If you intend to cover rough country, encase the bottom of the car in a detachable sheet-iron covering built in several sections. Have it fit snug and tight to prevent rattling and resist shocks. Nothing but iron will do, as you must be prepared for "roads" that are simply two deep ruts, with a stony ridge in the middle on which the car bottom will drag at intervals. You must also take into account stretches of open country, bristling with tough vegetation like sage brush, which has been known to wear to a shaving the wooden handle of a spade strapped under the car body.

Take with you enough rope and chain to go around all four wheels. Sometimes you may need all four lengths of chain to pull the "other" car out of a dilemma. For this emergency carry detachable links to join the chain lengths into one, and use the rope as a pulling strap at either end of the chain. Thus a degree of resiliency is established sufficient to prevent both rope and chain from breaking. Carry also a small jack for lifting the car-body to admit of repairs, a spade, an axe, and in winter a wooden shovel or two. You will find them very useful when you least expect trouble. For summer camping bring along a mili-

tary canvas tent. If you roll it in the army regulation style you will be surprised to see how small a bundle it makes. Have the poles made folding, the same as the legs of a surveyor's or photographer's tripod. To provide against dampness under foot a floor covering is best made out of the kind of flexible enamelled oilcloth used for dashboards and carriages. It is absolutely waterproof, won't crack, and can be kept clean and sanitary simply by wiping. For a hamper covering, this material is also preferable. Right here let me warn you against stuffing your clothes in hampers. You can't use them if you do, without a tailor to press them, and the tailor is never there when you want your clothes. Pack your clothes in a trunk and send them ahead by rail to some point of interest on your route where you can stop over and dress a bit. Don't take along with you in the car any other or any more clothing than you need for actual travel and camping. Plenty of underwear and stockings is alike indispensable during any season, but for summer a light karki suit, with a long leather coat for cool nights, and an oilskin suit for rainy weather, is really all you need unless you wish to add overalls for doing repairs. A pneumatic mattress and an army blanket is all the bed you would want, and the outfit rolls up snug. To my mind a hammock makes a handier and more comfortable bed for summer sleeping, and where trees are wanting it may be slung inside the tent on the poles, provided these are made strong enough. But even where there are no trees, sleeping in the open in a hammock can easily be accomplished. Here is an arrangement that will accommodate three sleepers: put three hooks on the side of the automobile, one in front, one in the middle, and one in the rear. Fasten the rear ropes of the hammocks to these hooks and lead the head ropes through the tent opening and secure them around the center pole. The heads of the sleepers will be quite close together and on a higher level—affording better sleep—than the feet, which will be at least a yard apart, and thus easy getting in and out of each hammock is provided. This shows what three hooks, properly used, are good for. For winter travel you, of course, dispense with your tent in favor of the sleeping-bag. If you can't get what you want at the stores, make your own bag. The outer covering should be waterproof. Rubber is too heavy and bulky, and unless you know of something better, I would again suggest a heavy grade of enameled oilcloth. This material will also prevent bugs and vermin from entering the bag, and, unlike rubber, does not "draw" the skin. The body of the bag can be made out of a high grade horse-blanket with an inside lining of flannel, or simply a pure flannel blanket, than which nothing is warmer. It might not be amiss to let the neck of the bag continue into a hood for the head—simply oilcloth lined with flannel. This scheme enables you to remove your cap during your sleep, and thus obviate the headache this headgear often produces in a tenderfoot, while you have all the comfort of a loose-fitting hood.

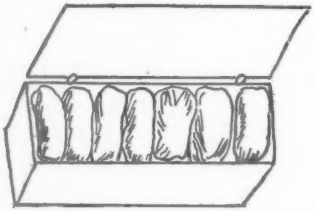
A cheap and quite efficient method of improvising a sleeping-bag on the spot is to fasten together with safety pins two pieces of enameled oilcloth, roll up in your blanket and slide in. I should think that stunt would make 10 degrees below seem a small drop to any man sleeping in the open. When I stopped at Dyrisfjordur in Iceland, in 1888, I saw Fridthjof Nansen, who was then preparing to cross Greenland with a kit so simple and small that even I, who was at that time a naval cadet, questioned its efficiency. He had no fur clothes at all, but wore a thick gray woolen suit of a special weave, the jacket being double-breasted and buttoning on the side, not in front. His sleeping-bag was of the same material with a light canvas cover, which did not protect nearly as well as the oilcloth cover suggested above. "*Mine ski er mit baal,*" he explained, meaning that he would use his skis so well he should need no other warmth. The automobile camper cannot depend upon exercise to keep him comfortable—hence his kit must be the heavier.

To get the proper benefit of a sleeping-bag, leave your fur garments in the car, remove your boots, and keep on only your underclothing and ordinary traveling suit, both of which should be made of wool. When you have bagged yourself in this manner, effect a change of stockings, and you will not be likely to suffer from cold feet. If a strong wind is blowing, go to work with the wooden shovel and pile up a foot of snow right in the face of the wind.



Triangular dashboard box, with isinglass pane, containing cylinder with "driving" map attached, showing a whole day's route.

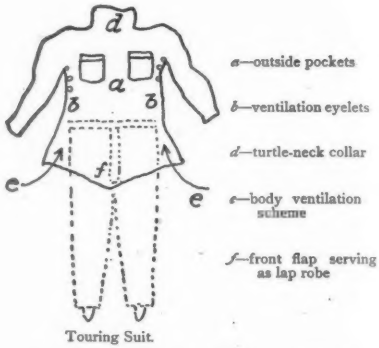
Lie down in your bag under the lee of this snow wall and you will be ent rely comfortable. In fact it is warm to sleep out in the snow in this fashion, whereas canvas overhead makes you chilly, and besides it is liable to blow away or burst under the weight of snow. When you wake up in the morning, just remove the hood and rub your face and hands vigorously with the snow. This will



Proper way of packing hamper, with bundles done up in cloth of different color to distinguish contents.

give you splendid circulation. Leave soap alone and don't wash. In extreme cold, soap will only crack your face. To "equip" your face for the rigors of fast traveling in a freezing atmosphere, rub both face and hands with vaseline, and keep on rubbing until every pore is fed and closed. You may then wipe with a rough towel, and whatever dirt is on your face will come off in the towel, enough vaseline remaining in the pores for protection. You are now fit to jump out of the bag. Before dressing, however, wrap yourself in a blanket and skip around in the snow with bare feet for five or ten minutes. If you keep your feet going you won't feel the cold in the least, and it will give you a start of warmth and comfort that will last all day. Now slip into your fur garments and boots, and light the camp fire. With the first sip of fragrant coffee you will be quite comfortable, and at peace with all the world, even if the thermometer says thirty below.

The common kind of fur coat is not so good but what it can be improved. The open front is a mistake. It is of little use except to get at the inside pockets, and inside pockets are a mistake. A fur coat opening on the right side with clasps unbuttons readily with the right hand. Big pockets sewn on the outside will make un-



Touring Suit.

AUTOMOBILE CAMPING OUTFIT (MINIMUM QUANTITY)

FOR THREE PERSONS IN 1200-LBS. CAR OF 12-HORSE POWER.

INDIVIDUAL BAGGAGE FOR EACH

3 pairs of stockings,
3 changes of underwear,
1 toilet outfit, including soap, toothbrush, scissors, razor kit, mirror, vaseline, etc.,
1 karki driving suit,
1 light oilskin suit and Sou'wester.
3 yards of flexible enameled oilcloth.
2 pairs of shoes and 1 pair of rubber boots,
3 flannel outing shirts,
1 money belt.

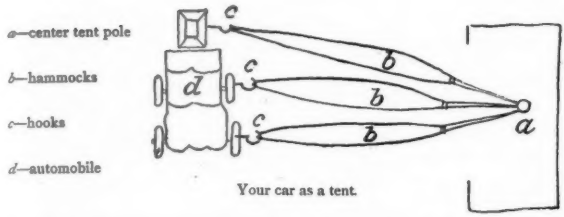
BAGGAGE IN COMMON

1 U. S. A. military tent, with detachable poles,
1 portable kitchen and utensils of aluminum,
3 hammocks with mosquito netting—blankets,
1 pneumatic mattress, extra wide,
1 gasolene stove outfit,
1 camera,
1 shotgun with ammunition,
1 rifle with ammunition,
3 revolvers with ammunition,
1 axe—with detachable handle,
1 spade with detachable handle,
1 handsaw,
2 fishing rods with tackle,
1 bull's-eye lantern
1 complete repair kit, including car-jack.
1 pair binoculars,
1 outfit of charts and maps,
1 telegraph outfit and wire (also telephone outfit),
1 pair overalls for repair work,
1 collapsible bucket.

For winter touring add

1 fur garment for each,
1 sleeping bag for each,
1 shovel for all.

The sleeping bag substitutes the tent and the hammocks.



Your car as a tent.

fastening unnecessary, except for donning and doffing the garment. Go a step further and appropriate the century-old experience of the Eskimo in building fur clothes. Dispense entirely with buttons and clasps. Shape the coat like a turtle-neck sweater. Make it loose-fitting all over, and especially over the waist. Cut it off at the hips. Make the trousers out of the same fur, with the hip-lining somewhat lower than the ordinary, so that the coat will just overlap it. This design will afford extreme mobility of body, also in the waist, where the space provided by the loose overlap of the coat will supply ventilation—a most important thing, without which any garment is unsanitary and soon ceases to yield and retain warmth. Under each armpit insert a single row of, say, four circular eyelets, and sew over them, on the inside, a strip of cheese cloth. This will prevent chills around arms and shoulders from stagnant sweat, and it will add to the wearer's comfort. Snap-buttons could, of course, be provided on the right shoulder and on the side of the neck, to make the jacket slide on easier, but it isn't necessary if only the neck is wide enough to put the head through. First insert the arms in the sleeves and then draw the jacket over your head as you would a sweater.

The Greenland Eskimo is so particular about ventilation that he leaves an open space at the waist—through which his skin shows—between the coat and the trousers, which fasten about the lower half of the loins with a strip of raw-hide.

Your portable kitchen must contain nothing at all likely to rust or tarnish. Aluminum utensils are far away the best. Nothing, however, will replace steel knives and forks, and if you wrap them in oilcloth after cleaning, they won't tarnish. Traveling in a treeless country means that you must have a gasolene stove to be replenished from your car tank, but in most instances you should be able to enjoy a camp fire. For personal protection carry a revolver, and for "picket duty" bring with you a good hardy dog that you can also use in hunting, and let him sleep in the car. A shot-gun and a rifle should enable you to bag whatever seasonable game you may locate, and an outfit of fishing-tackle will come handy even in winter, when you may have to emulate the Indian, and fish through the ice. Presuming you are a fairly good sportsman, there will be periods during such a tour when you should have no difficulty in supplying the camp with all needed provisions. In fact, the shooting and fishing end of such a trip, in conjunction with the camping feature, is the very sport that lends zest to it. You can camp on the tin-can plan, but it isn't very exciting.

The proper way to pack is one of those little side issues that most tourists do not stop to consider, and which, for this reason, causes needless worry and work. The baggage is usually stowed with no discrimination between the things needed constantly and the things wanted only occasionally. This means unpacking a lot of things you don't want, to get at what you do want, every time anything is wanted. Bags, satchels, suit-cases, etc., are useless, and take up too much room. Bundles alone are satisfactory, but labeling them won't do because you have to hunt for the label, which is liable to get torn or lost. Provide yourself with a dozen different colored pieces of oilcloth. Use white pieces for packing underclothing, black pieces for clothing, red for footwear and outerclothing. Pack your charts in yellow, your ammunition in blue, and your kitchen utensils in green, oilcloth. Divide up the other colors to distinguish the rest of your kit, and pack what you need constantly in the hampers, which had better be lined inside and outside with heavy enameled oilcloth. It is much easier to remember the contents of a bundle by color than by number or location.

Opportunities for appropriating and improving the ideas carried out by experienced voyageurs will suggest themselves to the ingenious camper.

Here is a good idea originated by an Englishman and improved upon by an American. The latter is a New York business man and known to me personally. In tramping the Alps he ran across an apparition resembling a peddler, which on close view proved to be mainly an alpenstock with strings tied to one end of it, and at the other end an English scholar of Socratian simplicity. On each string dangled a small bundle done up in paper, the total number of bundles representing his entire pack. He could readily unpack any one of these bundles, and put his hand on what he might want, without disarranging the rest of his baggage. That was his scheme. A few weeks later my American friend was fishing salmon in the Loch Lomond with a Scotchman, who considered himself weather-and-worry-proof in a triple-ply raincoat. A shower came up. The American, who was dressed in an ordinary outing suit, produced a yard and a half of enameled flexible oilcloth, and cut an aperture in the middle of it with his pocket knife. Putting his head through this aperture he had in effect the protection of a Mexican poncho. A goose-back could not shed the rain better than this oilcloth cape, which was comfortable because it hung loosely and provided ventilation. Another piece of oilcloth, the size of a handkerchief, pinned to his cap, transformed it into a waterproof headgear. He didn't look pretty, but he felt pretty good. After the shower, which left the American dry and cool, and the Scotchman wet, hot and swearing, the former suggested luncheon. The Scotchman's fare was almost as water-soaked as himself.

"Have a bite with me?" suggested the American, unclasping his belt, from which various strings depended holding small parcels wrapped in oilcloth and all marked 8:10 A. M., the hour of starting. The Scotchman, who supposed the parcels to contain only fishing requisites, was hugely elated to find in some of them a choice assortment of sandwiches as fresh and palatable as could be desired.

"Suppose we sit down," remarked the American, removing his improvised mantle, which, spread upon the wet grass, afforded a dry seat to sit on and a clean cloth to feast upon. At the price of less than thirty cents my American friend had succeeded in providing himself ingeniously with raincoat, rain-hat, a dry seat, a clean tablecloth, and rain-proof kit, each separate part of which could be got at without disarranging the other parts—the alpenstock scheme was out-done.

If you go out automobile camping, you will have to go out afoot shooting and fishing a bit, when it will pay you to adopt the oilcloth idea, which you will find entirely practical.

The care practised in packing your camp-kit properly is, to some degree, a waste of effort, unless at the same time, you provide for a proper distribution of the separate parcels.

For a party of three traveling in a tonneau with seating capacity for five—and this is an ideal proportion of room to occupants for just such a trip—I would suggest a handy disposal of the outfit mainly in hampers. Besides the usual arrangement over the rear wheels, an auxiliary hamper could be strapped on the outside of the tonneau door, which should contain nothing but the "emergency" wardrobe, such as oilskin clothing, rubber boots, etc. When a shower or a dust-storm springs up, the third man traveling in the tonneau simply reaches over, empties the auxiliary hamper and deals out the clothing. You avoid the irksome stop or slow-down at the very time when you may want to use all possible dispatch to gain shelter. Directly under the forward end of each side hamper is a space, in most machines of standard make, extending to the dip of the rear wheel dash, which could very well be utilized for an auxiliary hamper. An oblong pattern, measuring twelve inches wide and thirty inches long, would fit most cars of 1,200 pounds size. It should be fastened at top and bottom in a readily detachable manner, so as to permit of access to the machinery, part of which it will necessarily hide from view when in place.

Leaving one seat in the tonneau for the occupant, the other seats could be either removed and replaced with specially made hampers, or a large hamper fitting into the vacant space, and extending the height of a man's shoulder when sitting, could be placed upon two seats, leaving a double seat for the occupant and the camp dog or "mascot." This hamper should be divided vertically in three compartments to make the contents "get-able." You probably will

not be able to get just the shape of hampers you want at the stores, but any maker of wicker-ware and reed furniture—there are plenty of them in the business directory—will build you any desired pattern for a slight extra charge, if you furnish dimensions and measurements. Thus equipped, your machine will carry two regular side hampers horizontally, two auxiliaries placed vertically under them, a fifth—the "emergency" hamper—on the door, and a sixth filling half the inside tonneau space. There is enough variation in the shape of these patterns to permit of your packing your whole outfit in wickerwork and oilcloth—a decided advantage. Tent-poles, spade and shovels being detachable, you can strap them to the car body in line with the chassis rail after inserting them in cases of heavy oilcloth. The guns and fishing rods, similarly encased, go under a double strap on top of the rear-wheel hampers. There should be room on the tonneau floor for the pneumatic mattress when deflated and folded four times. The tent canvas rolls up snug in a corner, unless you travel "omnibus" style, when you may stow it on the roof. Consign your portable kitchen to the vertical hamper on the left, and your kitchen utensils, etc., to that on the right. Dispose the balance of your kit among the other hampers as already indicated.

For a trip of this kind a searchlight is almost indispensable, not only for examining the road-bed, but for the timely locating of such obstructions and dangers as cannot be detected without it. You may drive along a well-kept country road for miles without mishap, and, when you least expect it, suffer the experience of a friend of mine, whose face was horribly lashed by brushing full speed against a row of low-hanging willows. He was watching the road intently when it happened, and his lamps threw no light on the danger overhead. In some parts the farmers have the cute habit of putting up a rail or a board fence across the road as a warning in case of broken bridge ahead or similar accidents, and while the "warning" works well enough in the daytime, it becomes a menace to night travel, as such a fence is usually not detected until you are climbing it. A searchlight will enable you to spot the fence in advance, and as you return upon your tracks, you can manipulate the flash left and right to pick out a cross-road or devious route. When two machines are doing the trip together, and cross-roads puzzle you as to the right course to follow, let one machine remain at the crossing while the other goes ahead scouting. The scout can signal "All right—come on" by three flashes of his searchlight, either by revolving it thrice in a circle, by turning it off and on, or by fanning a cap before it.

If you combine the instinct of the sportsman with the touring spirit of the automobilist, it is not at all unlikely that successful camping and hunting and fishing may take you out into the open where roads are not and the chart is a vacant space. Suppose you lose your way in the wilderness, that you have a serious breakdown, that your provisions give out, and starvation faces you. Suppose—for this has occurred more than once—that all this trouble happens under the shadow of a telegraph pole, humming with the busy talk of faraway cities. What wouldn't you give for a chance at that wire for a minute or two? Don't you think it would be just as well to carry along a small Morse instrument, and learn just enough of the code to tell the nearest operator that you are in trouble? Be a little circumspect, however, and don't do it too often, that you may not be mistaken for a "wire-tapper." Also, don't in your hurry and worry forget to pay the tolls for your "steal" at the nearest telegraph office. While you are about it, you may as well supplement your ticker with a modern portable telephone—a miniature pattern of internal 'phone will do—for in many districts the upper wire in the farmers' fences is part of a rural telephone exchange, through which you can call up pretty nearly a whole community—from a team of horses to pull you out of a hole, to the sheriff and his posse and the doctor and his bandages, for automobiling, like all true sport, has a delightful degree of uncertainty.

AMERICA SETS THE AUTOMOBILE PACE

By H. P. BURCHELL

THE value of American automobiles sent to foreign lands approximated a trifle less than $2,000,000 last year, while the value of English exported machines was less than half that sum.

A still more convincing contrast appears in the value of foreign cars brought into these two countries. English automobilists imported machines worth over $8,000,000, while in our own land the importations aggregate barely $2,000,000. The high duty undoubtedly contributes toward reducing the influx of foreign vehicles in America, but none the less, the figures clearly show that the English-made cars do not satisfy the demand, while the contrary is eminently true of those of American manufacture.

Some idea of the magnitude of automobile manufacture in this country, and the increasing popularity in motoring for pleasure, may be had when it is stated that in 1899, only fifty motor cars were owned in America, while at the present time the individual owners number fully 70,000.

The small car—that of moderate horse power—has always been characteristic of American manufacture. Foreign critics, and particularly those from France, have occasionally condemned America's so-called lack of progress in not branching out more effectually into the higher powered machines, those that may properly be termed racing cars. In this respect America has been behind France and Germany, but a marked change is now taking place, for, thanks to the stimulus given by the Vanderbilt cup race last year (1904), many leading American manufacturers are now devoting more attention to the design of powerful machines for racing purposes. There is hardly any possibility, however, that this movement will reach the extreme seen in France. It is, too, a curious coincidence that at this very time the entire automobile world should be turning to the very type of car that has been so characteristic of American manufacture. In other words, the car of the future, from present indications, seems to lie in those types possessing from twenty to thirty-five horse power. The excessive demand for cars averaging close to one hundred horse power is practically over, except for racing. Even with the race purpose in view, America has conclusively shown that with cars from twenty to twenty-four horse power, practically as good results may be obtained in speed, as has been popularly credited to the big cars alone for so many years.

Thery, the Gordon Bennett cup winner last year, voiced this sentiment for moderate powered cars, while on his visit to America. "The popular car in France," he said, "during the coming year, will be the thirty to thirty-five horse power vehicle. The heavier cars—from sixty to one hundred horse power—are too big for general touring. Their complicated mechanism requires the most careful attention, and only on smooth, long stretches of road, can those high powered cars be used with complete satisfaction. For private ownership, the demand for these racing and semi-racing machines has been overdone and a sharp reaction is setting in. Smaller but absolutely reliable cars containing, if possible, less complicated machinery, are what the public is asking for now.

Several large foreign manufacturers have announced that their entire output during 1905 will be of moderate powered cars. In America, this tendency will not be noticed so sharply because practically all of the monsters in motoring have been of foreign make. The marked success in one of the closing track races last season of an American twenty horse power car, in defeating two of the most powerful and successful foreign cars owned here—one of sixty and the other of ninety horse power—and the success of the twenty-four horse power American car in the Vanderbilt race, was a revelation of the possibilities of the moderate powered car. The twenty horse power car weighed but eight hundred pounds, yet showed a track speed of fifty-five seconds for a mile, which is but a fraction higher than the world's track record for the high powered cars.

Touring has become a popular and delightful pastime, yet it is only in its infancy. Hundreds of owners have traveled thou-

sands of miles over good, bad and indifferent roads without advertising the fact from the house-tops or in the columns of a progressive trade paper. The cars of moderate horse power are most serviceable for this purpose. With a twenty-five to thirty-five horse power vehicle, the occupants have every reasonable assurance that the car will take them on their journey at a comfortable rate of speed and will go up hill at a pretty lively clip. The American automobilist dearly loves a car that will go up hill without acting as though it wanted to stop, like a wheezing hack horse, at every mound, to gather breath for the next stage in the ascent. A car of the horse power as indicated may always be relied upon to climb hills at a fair rate of speed, and on good stretches of road it will not be obliged to take the dust of many passing machines.

To how great an extent the national individualities of automobiles may be recognized was strikingly illustrated a short time ago by the purchase in this country of a car for use in Turkey. The purchaser of the car, a young Turk who had been educated here, was asked why he bought here instead of in Paris, as he could obtain equally as good a car there and incur less expense in shipping. His answer was that a car made for use on American roads would be far more serviceable in his own country, than a French car built chiefly for speed, as the latter sets too low on the ground for satisfactory use on ordinary and sometimes very bad roads. The heavier French machines are swung much lower to the road than the majority of American cars, which permits greater speed, and it facilitates rounding of corners at a fast pace. The lower the frame of a car is to the road, the less danger there is that it will topple over. Thery, when asked if the outside wheels of his car did not leave the ground while taking the corners at fast speed in the Gordon Bennett race, denied that such a thing was possible with the best French touring cars to-day.

India, toward the close of last year, made a commendable effort to ascertain the type of cars best suited for use in that country. An eight hundred mile reliability run extending over eight days was held, the purpose being to stimulate the use of automobiles for official and business purposes, and to learn what styles of cars would give the greatest satisfaction on the native roads.

The Vanderbilt Cup race was a great boon for American automobiles. It brought to this country some of the highest skilled, best racing men of Europe, besides other careful investigators, and it gave the foreign representatives a clearer idea of the magnitude of the motor car industry here.

America's prestige abroad, previous to the Vanderbilt Cup race last season, had not been very high, due to the poor showing made in international events. Consequently, America's ability to turn out, not only racing cars but substantial cars of general use, was viewed with discredit. From that fact arose the lack of seriousness that characterized the Vanderbilt race announcements until close to the time that the event was to be held. Then several prominent French racing automobilists arose to the occasion and came over, but others, of practically equal merit, remained at home. The success of the race, and the high class cars that were entered, surprised the foreigners. Here, then, was something worth looking at, if not only for racing glory, at least for the cause of French prestige, and therefore the prediction has been made from their own country that when the second Vanderbilt Cup race comes off, nearly every prominent racer in France will be on hand.

In the training of experienced chauffeurs by means of well-established schools, America is setting an influence that will undoubtedly be followed more generally in a short space of time. A chauffeur needs to be a skilled mechanic in many respects, and Sir Alfred Harmsworth was quite right when he criticized the folly of Americans in employing so many foreign automobile drivers, regardless of their ability, but simply because they came from a land where the motor car industry holds a superior position. Owners of vehicles, themselves, are acquiring a better knowledge of the mysteries of motors, engines and cylinders, and this naturally leads to the demand for highly experienced drivers of cars. There is a steady and commendable growth in all lines of automobilism, and while no one wishes America to reach the insane craze for speed at any cost, which until recently was characteristic of France, none the less national endorsement will follow upon America taking a higher place in the world of automobile activity, where her influence for reliable cars will reflect beneficially upon makers and users.

THE SPORTSMAN'S VIEW-POINT

BY CASPAR WHITNEY

OUR friends will not take offense, we feel sure, if, with Mr. Whitney absent in South America on one of his adventuresome-hunting and human-interest material gathering trips, we take this space and opportunity to say something of our magazine itself, and of what its Editor is doing to make it entertaining and of service.

OUTING is a magazine of human interest devoting itself to the outdoor world because it recognizes outdoor pursuits as one of the most colorful and interesting and serviceable expressions of human life. OUTING seeks to nourish and develop that interest for all it is worth—but for no more than it is worth. OUTING believes in the thrill of victory that comes only in honorable contest or occupation.

Mr. Whitney intends that the magazine shall be the indispensable and entertaining ally of every man and woman who has any sympathy with the outdoor expression; and the helpful friend of those desirous of putting that sympathy into practical endeavor, whether they live in town or in the country.

Therefore, the range of practical "how to do it" articles in the Editor's plans for 1905 is very wide—and cover in thorough detail every likely field of inquiry.

We intend that OUTING shall be a complete and a rational and practical all-round exponent of outdoor life. Thus we shall help you to grow flowers in your window boxes, to hunt the big game of the old and new world, to skillfully handle your horses, to properly care for your dogs, to beautify your home at the minimum expense, to safely sail a boat, to know what to grow on an acre of land and how to grow it, to make good roads and keep them good, to angle with success and pleasure, to successfully stock a stream, to profitably raise chickens, to drive an automobile and how to keep it in repair—and to play games with skill and in sportsmanly spirit. In fact—we propose that no outdoor activity or interest shall fail of being served in OUTING to the entertainment and the instruction and the benefit of our readers. In all these directions we are perfecting an organization which shall leave nothing to be desired—we are confident, for neither talent nor money nor effort is being spared. That our endeavors have not been without appreciation, we know; it will not be amiss to say here that increased business has made it recently both necessary and advisable for us to install our own plant for the composing, electrotyping, printing and binding of the magazine.

If we may, with not unbecoming pride, point to the magazine itself as an eloquent brief of the scope and intent of our plans—we shall ask that you accept it as an earnest of what we have in store in the way of virile fiction, human-interest, travel, adventure and country-living articles; and practical papers touching every form of outdoor life.

THE SCHOOL AND COLLEGE WORLD

By RALPH D. PAINE

WILL PRINCETON REVIVE HER ROWING DAYS?

PRINCETON is to have a made-to-order lake three and a half miles long, whose waters will lap the shores of her campus. This handsome scenic acquisition is the gift of Andrew Carnegie, and as a university benefaction will long be unique. It can be compared only with the bequest of Mark Twain's millionaire who left to his nephew the finest collection of echoes in the world. At an expense of nearly $200,000, a large tract of farming land lying in a natural basin is to be cleared and dammed and ready for inundation before the end of this year. When Princeton shall enjoy this interesting sheet of water, her students will have the finest rowing facilities in this country, because the claims of boating will be at their doors.

While no plans for a revival of rowing have been announced, it is a safe prediction that the "Carnegie Lake" will swarm with working-boats and shells before many seasons have passed. The young men of Old Nassau are ardent sportsmen, finding all their pastimes within their own boundaries remote from cities, and they are out-of-doors in large numbers in all seasons. All other athletic institutions have taken to rowing because they had water to row on. Princeton first manufactures a handy course, and then thinks about rowing on it.

"A revival" of rowing among the Tigers sounds oddly in the ears of the rising generation, which has forgotten that Princeton once entered her crews in the regattas of the "Rowing Association of American Colleges." This was way back in the early seventies, and the orange and black was in the field of aquatic rivalry with such other defunct rowing interests as Brown, Amherst, Bowdoin, Wesleyan, Dartmouth, Trinity, Williams, and the Massachusetts Agricultural College. These were the days when a round dozen college crews started off together at Saratoga, Worcester or at Springfield, a sight to make the Poughkeepsie regatta of to-day seem small potatoes. The Princeton oarsmen practiced on the canal which loafs past their classic shades, and it was rowing under heavy handicaps. It is related that when the crew wished to turn around and go home, the shell had to be lifted upon the tow-path, swung round, and put in the water again.

All the crews of those times rowed in six-oared shells without coxswains. The Princeton rowing honors were not conspicuous. In the Saratoga regatta of 1874, she finished last in a field of nine crews, and over the same course in the following year, the orange and black was tailing at the end of a procession of fourteen college boats. But Princeton men can afford to smile at these ancient records, for, in 1871, Harvard was beaten by Brown and the embattled farmers from the Massachusetts Agricultural College.

Worse than this, Yale was trounced in 1872 by Amherst, Williams, Bowdoin, Massachusetts Agricultural and Harvard. And the dark blue was not only the last of the six boats, but was whipped by a minute and three quarters of distance. This was not only the worst crew that ever rowed for Yale, but incongruously enough, it contained the Freshman who as captain and stroke brought more prestige to Yale oarsmanship than any other man ever connected with it. His name was Robert J. Cook.

When Princeton, therefore, launches her first crew on "Carnegie Lake," she can look back on her by-gone rowing annals as worthy of comparison with the humble beginnings of Yale's great fame on the water. And when we hear of "The American Henley on the Schuylkill," as if it proclaimed a new era of interest in American rowing, it is worth recalling that the popularity of the sport among the colleges was far greater thirty years ago than it is at present, or is likely to be for many years to come.

AN INSTRUCTIVE GLIMPSE OF OXFORD

Ellis Schutt, the champion distance runner, formerly of Cornell, now a Rhodes scholar at Oxford, in writing a friend in Ithaca, has this interesting comment to make regarding an athletic system that is full of the spirit "of sport for sport's sake:"

"After luncheon at one o'clock, we go out to the river, or track or football, *every one* in the college, and play at games until five, when we return and go in crowds of half a dozen to some man's rooms for tea. After tea we sit and smoke and talk over the games of the afternoon or play whist until dinner at seven thirty. After dinner one either has a bunch of men in to coffee or one goes to some other man's rooms for coffee, where we sit and chat and smoke till nine. Then we disperse and study for a bit and turn in. It is the most sociable life I could imagine, not in an effeminate fashion, but in a strong, lusty fashion, common to sport-loving, manly fellows."

Any notion lurking in the mind of Mr. Schutt that the Englishmen "take it easy" in sport when they are in the contest, was dispelled by the cross-country race between Oxford and Cambridge. Schutt finished second for Oxford, and wrote Trainer Moakley of Cornell:

"The race was awful. We don't know at home what cross-country is. We started on a seven and a half mile course in a blinding, cold rain. The first mile was in a forest path, and was done in 4.38. Then we struck the mile and a half of steep,

up-hill, plowed ground, muddy and clayey. I went up to my knees every step, and the stuff stuck to my shoes. I was dead to the world when we got to the top. From there we had two more miles of rough and ragged forest path, then a mile up a hill like the side of a house, and the last two miles on the flat. It was the hardest race I ever saw. The fences we took were like this: a fence three and a half feet high, with a ditch five feet deep, half filled with water. We jumped straight down into the water to our waists, and then clambered out all dripping. There were also barbed wire fences here and there. I was running along, blinded by the rain, and did not see one of these obstacles, and was cut quite badly across the legs. After the race we were given a dinner by the Thames Hare and Hounds. They gave me a great ovation as being the only American there, and the first Rhodes man to get 'varsity athletic honors. They made me try a speech, which I bungled. It was worse than bumping into barbed wire fences."

THE SWEEPING VOGUE OF BASKETBALL

For years gymnasium instructors and physical directors puzzled their brains how to find exercise for the winter months which might attract students to indoor work, without making it seem like drudgery. It is still a problem, but the rapid rise of basketball has done much to help toward a solution. At first looked upon with more or less contempt by the university athlete, the game was soon respected as a sport demanding the agility, wind and intelligence of a first-class branch of competition. The spread of football was no more surprising than the basketball crusade, which has achieved an intercollegiate dignity in a few seasons. No more striking proof is needed than the mid-winter trip of the Yale basketball team. These ambitious experts left New Haven on December 21st, and traveled three thousand miles, a record for an Eastern college team of any kind. They went as far south as New Orleans and then tackled the champions of the Middle West.

At Brown University, for example, "as a result of the steadily increasing interest in basketball during the past two or three years, the sport has become the most important branch of our athletics during the winter term. Although the game was introduced five years ago, its popularity has been so great that it ranks with baseball, football and track athletics, although it is not as yet recognized by the Athletic Association."

This pastime is unique in that young men play it without fear of being called effeminate, while young women in school and college fight out their championships without being called masculine. It is the only prominent and widely popular field of school and college athletic activity adapted to the physical skill of both sexes. On the Pacific coast, as among the woman's colleges of the East, basketball is a feminine diversion. In the former territory, the young woman's league includes teams from Stanford, California and Nevada universities, Mills and the San Jose Normal School. This combination boasts a league executive board which meets annually in January to arrange the schedule of the season's games. At such leading co-educational universities as Michigan, the girls play series of class games, a pretty feature to enliven the grind of winter on the campus.

As an admirable stimulus to draw young men and women to the gymnasium, as a training ground for oarsman and baseball player, and as an interesting and varied sport, basketball deserves its high esteem. But, absurd as it sounds, the game has been already invaded by the professional coach, for the American collegian is never content to let his athletics remain a pastime, so long as there is the spur of rivalry with other teams. The college world has seen football made a species of hard labor, and baseball turned over to professional handlers, and knows that the results have been demoralizing to the spirit of play. As soon as a new branch of wholesome sport becomes established, the professional coach is sure to be in demand, and basketball will go the way of its fellow pastimes, and become a burden to the athletic finances of the colleges, with paid coaches and trainers and costly training stables.

A BLIGHTED ROSEBUD

The *Michigan Daily* reflects a wholesome view-point of athletics in remarking editorially:

"The action of the athletic board of control in declaring Ralph Rose ineligible to compete in further meets will no doubt win unanimous approval from the students of the university. The giant athlete has, by his actions, brought to Michigan undesirable notoriety that can be counter-balanced in no other way."

THE GROWTH OF INTERCOLLEGIATE FENCING

What are called "minor college sports" are impressive in the aggregate. With basketball, ice-hockey, indoor relay and track meets, gymnastic contests and fencing matches, the winter season is as furiously active as the outdoor months. Fencing had to struggle hard for a solid foothold, but at last established as an intercollegiate rivalry in the East, it reached out for converts into the Middle West. But the older experts with the foils are not as zealous missionaries as they should be, as is shown by their recent refusal to admit the Michigan team to membership in the intercollegiate association. It seems to be a fairly typical illustration of the tendency of Eastern and Western athletic interests to separate themselves in two great divisions be-

tween which there is little sympathy or community of interest.

Certainly the West is big and strong enough to "go it alone," and in this case the inhospitality of the fencing body will simply hasten the formation of a Western fencing league with its own championship organization. Mr. Frick, of the University of Pennsylvania, secretary of the Intercollegiate Fencing Association, wrote the Michigan applicants that the "action was deemed advisable because of the great difficulty of arranging a satisfactory method of competition for more than the present number of teams." But he softened the blow by suggesting that a dual meeting with the Pennsylvania might be arranged if the fencers of Ann Arbor would pay the expenses of the trip to that place.

Michigan will now cultivate friendly hostilities with the fencers of Chicago University, where the pupils keep one master busy most of the time.

THE WINTER CAMPAIGN OF THE TRACK ATHLETE

The alumnus does not have to confess to many wrinkles or a scanty thatch who can remember when the winter campaign of a track athletic squad was almost wholly confined to limbering up in the gymnasium and running through the town streets. Nowadays, so high runs the spirit of competition, that the undergraduate with the speedy underpinnings is involved in a list of winter meets so formidable as to have turned the calendar round, making his spring outdoor obligations seem tame and few. Here, chosen at random, is the program laid out for the Cornell specialists from early in February on. First, they meet several Eastern colleges at the annual Boston Athletic Club carnival, including a two-mile relay race in which Yale, Harvard and Pennsylvania usually enter teams. The next event is a triangular meet among the Seventy-fourth Regiment of Buffalo, Syracuse University and Cornell, which sends a complete track team for the regulation list of events.

A little later, a relay team will go to Washington to take part in the meet organized by Georgetown, in which a number of colleges have entries.

Then comes the games of the New York Athletic Club, in which Cornell last year won a four-mile relay race and made a world's record.

Nor will these indefatigable flyers overlook the games of the Greater New York Irish Athletic Club, which are a "warming up" for the contest to be held with the relay team of Michigan University, which will be held in the East.

As an extra event, a two-mile relay race is being arranged among Cornell, Yale, Pennsylvania and the Seventy-fourth Regiment of Buffalo.

All these contests fill in the time until the first outdoor event, which will be the mammoth intercollegiate and interscholastic relay racing carnival of the University of Pennsylvania.

And we old fogies used to think the "Mott Haven Games" were the whole business of the track athletic teams.

WHERE ROWING IS ATTRACTIVE

The rowing season has opened with the dogged preparation on running-path and in the tank, and the adverse conditions under which Eastern oarsmen labor through snow-bound and ice-locked winter months, must make them sigh when they hear that the crews of the Stanford University are already on the water of Lagunita. With their wonderful advantages of winter climate, the Pacific Coast universities ought to build up rowing in the forefront of their athletic activities. It is therefore cheering to learn that at Stanford rowing will have the most successful season on record. The sport is in its infancy, compared with the Eastern systems of aquatics, but it has an admirable stimulus in the person of Professor W. A. Durand, who was chairman of the faculty committee on boating while at Cornell. He has more than a theoretical knowledge, and will do the coaching this season. The Stanford squad rows in four-oared boats, and has purchased a new 'varsity shell for this year's racing, a step in advance, as previously the contests have been rowed in working-boats. A new course and boat-house are planned, and both university and freshman fours are promising in enthusiasm and material. There is no reason why a first-class boating system should not be established at a place like Stanford, where all the drudgery that makes Eastern training distasteful can be eliminated from the start.

THE STUDENT FIRE FIGHTERS

The large surplus of youthful energy rampant on every college campus finds a safety-valve in athletics, and now and then in can rushes, bowl fights and hazing. The authorities of Leland Stanford University have found a new and eminently practical outlet for this high pressure in the maintenance of a student fire department. "Running with the machine," putting out fires, and all the fuss and fury of this lively occupation are really a new branch of athletics, and bound to be popular. The students on the active list of the department live in the fire-house, which is equipped with up-to-date devices for "getting off their mark" in a hurry. At night a watchman, stationed on the ground floor, is ready to operate a switch which in case of an alarm turns on all the lights and rings a gong in the sleeping quarters of the firemen upstairs. They pile down to their stations when duty calls as if the signal had been given for a mass-on tackle. Other college duties are not neglected, for part of the building has been fitted as a study and living room, and another apartment is being fitted up as a library.

AMERICA'S PROGRESS IN AUTOMOBILING AS REVEALED BY THE SHOW

AMERICAN automobiles for Americans, was the slogan that sent its reverberations throughout the length and breadth of our land from the national automobile show in the Madison Square Garden last January. This watchword has been still further intensified in the sectional shows that have been in progress ever since that time, and whose series will not be closed until the Washington, D. C., exhibit ends early in April.

Never before have American manufacturers of motor cars been so confident of their ability to stand side by side with their foreign competitors, never have they been so sanguine of the future and never before have they met with such encouragement from the public, as was attested by the unprecedented demand this year for motor vehicles of light and moderate horse power.

From whatever view-point the late New York show, which practically sets the pace for the automobile industry of the year, may be regarded, it illustrated progress. Broadly speaking, the show demonstrated that American ingenuity and mechanical skill, combined with American automatic machinery, American labor and American factory systems, have succeeded in turning out automobiles that not only equal cars of similar horse power made abroad, but in some respects surpass them.

America's chief claim to automobile distinction within the last three or four years has been in the excellence of its light vehicles. As the demand at first was largely for easy running vehicles for use upon city and park roads, concentration focused itself upon this type of machine. With the gradual appreciation of the delights of touring in a motor car, the need of a stronger and more serviceable vehicle was felt. This led to an extensive importation of foreign cars. Home manufacturers scented the danger, and made haste to meet the competition. Prejudice against the high-powered American cars gradually wore away as their reliability was proven, and despite the popular complaints against the Vanderbilt road race last season on Long Island, the admirable showing of some of the moderate-powered cars of home manufacture assuredly did more to bring the American touring car of from 24 to 35 horse power into favor than all the trade claims could accomplish in months.

This fact was strikingly revealed in the January show. An unusual number of vehicles were displayed of 24 horse power and over. In fact, so far as advance statistics are reliable, it was reported that over fifty per cent. of the motor vehicles turned out by American firms this year will be equipped with engines of more than 20 horse power, while only twelve per cent. will be of less than 10 horse power. This illustrates the increasing popularity of the automobile. The owner of a car to-day wants one that he may use in country touring, if necessary, and for this purpose he requires one with sufficient power to climb hills at tolerable speed. Hence the great call for the car from 24 to 35 horse power, which, when well made, is fast enough for anybody, can get to the top of any New England hill without calling for auxiliary horse power, and, with the recent advance in mechanical construction, has little if any vibration, while in carriage fittings, it possesses all the ease and comforts deemed necessary for long-distance riding.

Technical differences in construction, instead of striking novelties in the vehicles themselves, were the characteristics of the recent national show. It will hardly be necessary to specialize these cases here. All of the leading manufacturers whose machines have earned a reputation for stability showed certain features peculiar to their cars. There was nothing, however, so admittedly superior as to stamp one machine as vastly better than another, and any machine of a dozen makes was warranted to give equal satisfaction. It is simply a matter of taste now with the purchaser: some prefer an air-cooled motor instead of the customary water-cooled engine: others prefer the high-tension magneto instead of the low-tension type for ignition, and other differences in mechanical detail might readily be cited. Among these mechanical differences the increasing popularity of the air-cooled motor was one of the marked features, and its progress in the next two or three years will be watched with keen interest.

The side entrance to the car is, of course, now practically universal. This is an improvement over the rear entrance, and is copied from the French, whose superiority as leaders in the development of much that is best in the automobile must be freely acknowledged. Last year, only a few foreign cars had the side entrance. Now, no 1905 model is without it. The pressed steel frame, another lesson learned from our foreign friends, has been generally adopted, with tubular axles, wood artillery wheels and large pneumatic tires, all combining to greater ease in riding.

The prevailing style of engine is unmistakably the four-cylinder vertical type, placed under the usual bonnet in front of the car. Of 236 entire cars exhibited by nearly one hundred manufacturers in Madison Square Garden, 127 vehicles were equipped with the four-cylinder motor. Only twelve were of the two-cylinder type, eight of one-cylinder and two of six-cylinder. Nine cars had the one-cylinder horizontal engine. These 236 vehicles were divided into 207 gasoline, 20 electric and 9 steam.

The shaft drive on all but the very heavy cars, which still use the chain drive, the

wheel steer, the sliding gear transmission, in some cases operated on ball bearings, magneto ignition and the conical clutch, automatic float feed carburetors and mechanically operated inlet valves were all among the important elements of mechanism that were adopted in the best makes of cars. There is a very evident attempt to secure greater simplicity in construction, and this is now one of the most important problems that the automobile designer and engineer has to deal with. It is attracting attention abroad, for one of the complaints that many American users of foreign cars have brought against them is their complex and delicate machinery. This may not be so obvious on French roads, for it must be remembered that every country builds the cars best adapted for its needs, and on the better French roads delicate machinery is less liable to get out of order. In America, it has been stated that, outside of the cities, there are only three thousand miles of macadam road, whereas in France, the motorist has 130,000 miles of smooth road for travel and enjoyment. Strong, compact and single machinery is therefore a necessity for the future popularity of the American touring car, and the recent show illustrated this tendency toward simplicity, which eventually will result in the standardization of many of the fundamental parts of the automobile. A slight measure of success in this respect has already been observed. One American manufacturer showed his belief in the simple automobile by using only batteries for ignition and with nothing on the steering wheel except the ignition lever, the control being managed by a foot pedal. These principles were shown on all of the big touring cars made by this manufacturer, including a fifty horse power vehicle, selling for $6,500, one of the largest and highest priced American touring cars ever made for general use. Only two or three cars of this high power were seen in the show, and while there is no great demand for them, their very presence illustrates the tendency of American manufacturers to cope with the high-powered cars of foreign make.

The day of the high-powered car for ordinary touring purposes is passing. Thery, the French racer who won the Gordon Bennett race last year, during his recent visit to America said that the automobile of the future would be of moderate horse power and of simpler mechanism. He stated that even in France the craze for cars of exorbitant horse power is falling off, and that touring cars of from 24 to 35 horse power are becoming the more popular types.

American cars of this type may now be obtained at prices ranging from $2,000 to $3,500. With the limousine top and rich upholstering, the expense may be increased to $5,000 or $6,000, but this additional outlay represents more luxuries in the carriage body itself than any extra superiority of the machine in reliability. A speed of from 30 to 40 miles on a level may be made in these vehicles; fast enough, surely, for the excitement of automobiling, in which the likelihood of arrest for exceeding the speed laws may form no small part.

The leading manufacturers are making no reduction in price this year. Competition is manifesting itself in stronger machines, thus insuring greater reliability than in the lines of cheapness. This policy is now meeting its reward, and indeed there is no necessity for a cut in prices when over a score of manufacturers already have orders ahead for six months for all the machines that their factories can turn out. Stability is being sought for more than cheapness, and the purchaser is not likely to haggle over a few hundred dollars, provided he has the assurance that his car will do the work he wishes it to do and will remain in running condition for more than one season.

The cheapest car in the show was a two-cylinder, 3 1-4 horse power runabout, open top, with single seat accommodating two persons, for $375. For a child's vehicle, it was a marvel of lightness, and presented a wonderfully neat appearance, although somewhat too petite for the adult motorist. Runabouts of more compact build, and with several years of acknowledged reliability behind them, were seen from $650 to $950. For the latter price, an exceptionally serviceable vehicle may be secured that is as well fitted for ordinary use on country roads as the heavier touring cars.

When one considers the difference in price between the American and foreign machines, it is easy to see wherein a great part of the popularity of the home-made vehicle lies. The American manufacturer is amply protected with his tariff duty of 45 per cent. on imported automobiles, but unless he can turn out good machines, his home market is certain to be limited. The reliability of foreign cars has rapidly enhanced their importation, but yet, compared with American sales, their numbers are limited. The president of the Importers' Automobile Association, which held its own show this year for the first time, admitted that last year only 500 machines were brought to this country. They represent an enormous outlay of money, however, for their aggregate value was $4,000,000, which, at an individual valuation of $8,000 is not excessive with the duty. Consequently, it is easy to see, that with American cars equally as good as the foreign article for ordinary touring purposes, and cheaper by $2,000 or more in price, the mere fashion of owning a foreign car will not confer the same distinction upon the owner in the future as has been the case in the past.

As has been stated before, every country has its individualities in the make of its cars. Hence, certain French importers are now having cars made especially adapted to American roads, being somewhat higher in the frame than the vehicles made for

their home use. With longer stretches of good roads abroad, lower frames may be employed to better advantage than in this country. In fact, a number of French cars are being imported here now, bearing the mark, "Made for American roads."

Foreign manufacturers have taught American makers many valuable lessons, and they have been well learned. In the excellence of the material that enters into the structure of the foreign machine, the foreign cars have for several years been superior, and are yet, to some extent. In the selection of metals and their combination so as to produce the most efficient results, the foreign manufacturers have shown a care and patience that the eager American manufacturers have been somewhat slow to observe. More attention is now being given to this phase of motor car manufacture, and while two or three years ago, it was a rarity to see an American frame with the mechanism fully exposed for close scrutiny, over thirty frames of American cars were freely exhibited in the Madison Square Garden show. Sections of carburetors, clutches, transmission and engine valves, illustrating all the different operations, formed some of the most helpful and interesting exhibits of the leading manufacturers, and the care with which they were studied revealed the growing desire of American automobile users to understand the minutest mechanical details of their vehicles. In the excellence of the chassis, however, the foreigner is still in the lead, as well as in the artistic and graceful lines displayed in the carriage bodies. Great improvement in the latter respect has been noticed during the past year, and carriage builders in the United States are now beginning to study more carefully the appearance and beauty of the carriage itself.

The troublesome problem of tires seems as far from satisfactory solution as ever. The exhibition of tires, including devices for their preservation and non-skidding appliances, was very large and presented a number of interesting features, but there was nothing that came close to the point of practical solution. One of the novel devices that merited so much approval as to be ordered for a large number of demonstrating cars, was a coat-of-mail covering for the tire. In this case, the tire itself is accepted as it stands, and a stout leather covering is provided to fasten upon the tire. Upon the shoe of this tire covering is a broad band of hexagonal shaped plates of steel, one-sixteenth of an inch thick, so arranged that they do not touch except where the tire comes in contact with the ground. At this point, each plate touches its neighbor, thus presenting what is claimed to be an unpuncturable exterior. This coat of mail device will add a weight of about thirty pounds to the car, if only two of these tires are used for the rear wheels, which is where the great majority of tire troubles occur. For touring purposes in rough country, the plan presents feasible possibilities, but the additional weight and the apparent likelihood of the steel plates to retard, even minutely, the speed of the car will hardly recommend this novel plan of tire preservation to the users of racing machines.

The remarkable growth of the American automobile business was revealed this year, not only by the overcrowded condition of the Madison Square Garden with complete machines and accessories, but also from the fact that the foreign agents, in order to secure proper room to show the latest models from abroad, were forced to band themselves together and hold a special show in New York. This is the first time that two shows have ever been in progress in the same city in America at the same time. Both shows were a success, and each illustrated advanced methods in the industry. The crowning feature, however, is the high standard of reliability attained by the American automobile. This merit has been accorded without question for several years to the best foreign makes, but in machines adapted for American roads, at a reasonable price and of warranted stability, the American manufacturers have now reached a high point of efficiency, and the readiness of the public to support them means a belief that home-made vehicles are now equal to the work demanded of them.

WINTER PLANS FOR SUMMER GARDENS

By C. H. GREATHOUSE

DESK and bench give little opportunity for muscular movement; so Americans are losing virile energy born of field and forest, which has been their best heritage. Exercise will bring it back, and a hour a day gardening is worth two of patent exerciser or scientific contortions of muscle against muscle. So, if some who go a-gardening this spring of 1905 come out with redder cheeks and steadier nerves rather than prize potatoes, they will not think they have labored in vain.

Crisp, fresh vegetables of your own raising, however, are not to be despised. There is a quality in not having been to market. And they are easy to have. A space not larger than the top of a dining table is room enough. In fact, most folks have too much ground. The ordinary mistake of beginners in gardening is to try to do too much. They begin wanting to grow many things before they know how properly to cultivate anything; and so fail in everything, lose interest, patience and that inward sunniness, which, answering to the outward sunshine, is the best tonic.

Why, your secret is, with your little patch of ground, that you can do anything you want to with it. You can warm it sometimes; you can water it always, and that is from a half to two-thirds of the battle. Enough radishes to supply a small family can be grown in a box two feet by three, and an abundance of tomatoes on a spot eight feet square. One or two ordinary easy-to-grow vegetables is a good start for the first season.

HOW PLANTS GROW

Plain foundation facts come first. If kept in mind and applied to plant growing in a common-sense way, they will help greatly. But, remember that differing conditions—and they always do differ—want variation of method. The late William Saunders, thirty-five years head gardener at the Department of Agriculture, warned one day that watering the grass in the hot sun would kill it, replied: "I know it will die if I don't water it." The unusual condition was that the grass was very thirsty. He knew just how much water to give, and his grass lived.

A plant is a living organism, with mouths in the air and in the ground, and a stomach stretching all the way between. Its mouths are constantly changing their position. When the plant is very young they are close together near the stem; for they are in the tender root tips and in the leaves. They stay in the root tips and leaves, but these grow away from the central collar, where growth begins; and the mouths are most numerous and most active in the tips of the roots and in the young leaves. So the feeding points of the plant constantly tend to form the surface of two hemispheres, one above ground, and the other below. A common mistake is to try watering a larger plant by pouring a little water at its foot. Its mouths are three to ten feet away, and the water never reaches them.

WORK AND PLANS INDOORS

Tools, fertilizers and experiments go along with plans these wintry days.

If you have a city back yard, a space 15 feet wide by 18 feet long, find some way first to let all possible sunshine and pure air into it. If the sun should become too hot, a few yards of cheese-cloth, very cheap, will shade it. The wind is not likely to trouble you. Tomatoes, okra, beans, radishes, peas, potatoes, cabbage, are all easy to grow; but one, two or, at the most, three are enough for the first year. Tomatoes, okra and radishes are good garden companions. The market charges three prices when it sells only enough tomatoes for an average family; if you buy more, they spoil. Okra cannot be found in many markets, and once started, it grows vigorously. Radishes are best one hour from the soil, and can be had that way only from the home garden.

Lay out your little plot, in thought, with one or two rows of radishes 18 to 20 inches apart and long enough to allow about 3 to 5 feet for each member of the family. Two rows of okra four or five feet apart, and the length of your garden 18 feet, will supply a family of six. The remainder of the ground in tomatoes can be made to furnish more than most families use. If in doubt, omit the okra; if still in doubt, forget the tomatoes. Try radishes the first year, anyhow, no matter how much in doubt. If you fail on the first planting, you can try again in three weeks. Success is assured. Seed is cheap. And now is the time to get seed. Send for half a dozen catalogues, and look them over. They are interesting. But for okra or tomatoes, buy pretty much anybody's seed that is offered at the corner grocery. With radishes, see that the seed are large and plump.

Tools needed are a good spade, cost about $1.50; a garden trowel, 10 cents; an iron rake, 50 to 75 cents, and a garden hose long enough to reach from your water faucet to every part of your garden easily, cost, with nozzle, etc., 10 to 15 cents per running foot, cheaper as it grows in length. A good watering can, 3 cents, does well enough, but is more work.

SOIL AND ITS MAKE-UP

Soil can be made nearly anything wanted. Formerly soil was considered all impor-

tant. Now it is claimed plants will grow very well in water without any soil. Chemical constituents of the soil were once the main consideration in so-called scientific farming. Now the mechanical condition, the texture, is given as much or more attention. A hard clay made loose and crumbly by winter's frost will grow watermelons thriftily on a sunny bank. The point is to keep the soil so the moisture drawn through its capillary spaces will reach the little mouths of the rootlets in the outside shell of the underground hemisphere previously mentioned.

To keep this soil solution of nitrates and just in the right proportions for the particular plant, other constituents in reach of the little mouths is one of the great problems of agriculture.

A good plan in preparation for improvement of a close, sticky garden soil is to secure several bushels each of humus and sand. Both can be used to make the ground loose, and the humus is probably the best thing to enrich it. Humus is completely decomposed animal or vegetable matter. In the woods the leaf mold under the present year's leaf crop is a good sample of humus; and in the thick woods is a first-rate place to get a supply of this rich earth to put heart into your ground and make things grow. Commercial fertilizers can be bought as wanted, if wanted. Much more care and skill is required in successful use of them.

If the weather will permit, spade up a part of the garden before winter closes, and watch the effect in the looseness of its texture when preparation of the seed beds comes in after the frost is gone.

SOME WINDOW EXPERIMENTS

It will be worth while to try growing at the window any kind of plants that may be convenient. Cabbages, potatoes and onions are ordinarily recommended; lettuce also is started early. It must be transplanted to make it head. But tomatoes and radishes have good points. Tomatoes must not be started very early, or they will grow too large for safe handling before time to set them in the bed. Radishes grow quickly, and if the first planting fails to come up satisfactorily within a week, another can be made. Don't be afraid to dig up two or three seeds on the third day after planting to see how they are sprouting; and dig up more if they seem to be dead.

Boxes made of lath are cheap and satisfactory for window gardens. They are made three to four laths deep, of a length to fit the window in a way suited to the maker's convenience, and 18 to 30 inches wide. Any box of the dimensions indicated will do as well if provision is made for the escape of surplus water. This can be done by boring quarter-inch holes in the bottom, three to six to the square foot. A galvanized iron or zinc pan to set the box in is necessary to save wetting the floor. It should be an inch deep, and so adjusted as not to prevent drainage from the box. If necessary, put a pebble or small block under one corner of the box.

The nearest florist will sell enough loose rich potting earth to fill the window box; if it has been properly handled, there are no weed-seeds in it. But good earth can be procured from the woodland; if heated to 200 degrees F., all seeds in it will be killed. If no woods are near the backyard will furnish the basis. If it makes a sticky mud with no grit in it when wet and kneaded it needs sand; one part of sand to six of soil, more or less as the wet soil seems more or less close grained and clayey. For fertilizer add well rotted stable manure, or fresh manure mixed with straw thoroughly dried till the whole mass can be crumbled together in a fine homogeneous mass will do. Put one part of manure to three to five of soil.

Cover the holes in the bottom of the box so they will not fill up with earth as the water runs through. Bits of broken crockery, or flower pots, will serve for this. If turf is convenient, pieces turned grass-side down make a good first layer, and no other covering for the holes is needed. Fill the box with the enriched soil to the top, and firm down a little with a board; when the surface is about an inch from the top of the box, the soil will be close enough.

Draw little furrows lengthwise of the box an inch deep and ten to twelve inches apart, and drop in the radish seed about thirty to the foot, cover with half an inch of soil, pressed down firmly with a board or other flat surface. The object of this firming is to make sure that the moist soil is close to the seed. It must not be packed too close, and the surface must not be left hard.

If the box can be set in water to an inch from the top for two or three minutes, till the soil is moistened, but not wet, it will be well. Otherwise sprinkle carefully till the earth is thoroughly moist, but not sticky, to a depth of three inches. Sit the box by the window where the temperature will not go below 50 degrees Fr. Remember heat at the bottom of the box will make the plants all top. When the plants are up thin to two or three inches apart, water so as to keep the soil moist below the roots of the plants two to four inches, as they grow in size, and in three to five weeks there should be radishes for the table. There will certainly be experience for the outdoor gardening.

What kind of radish? Early red turnips, French Breakfast, Olive-shaped Scarlet.

These suggestions are for a small garden for beginners. In a general way they apply to a larger garden for beginners who have more time.

THE GAME FIELD

HOW TO OFFSET WINTER DEPLETION OF GAME

By EDWYN SANDYS

IT is no pleasant task to think of what the sure-to-arrive letters from the Bob White Grounds will contain. From a little private ground, less than two hours' run from Gotham, in fact, in one of the best parts of Long Island, I received a small box in which lay one of those brown-throated beauties to which I sometimes refer as "seed-hens." She was extremely hard, but a thawing and careful examination proved her to be in very fair flesh, which only added to my woe. Had she been reduced to skin and bones, it would not have been so bad, because a starved bird easily succumbs to a brief spell of severe weather; but here was an almost plump specimen as cold and stiff as an icicle. I'm afraid this means a serious killing-off of the birds so far as the abnormal weather has extended, which, if true, must also mean the at least temporary ruination of three-fourths of the Northern Bob White shooting.

The sole remedy, so far as I can see, lies in a prompt and judicious re-stocking, for which, of course, birds must be brought from the South. Gun clubs and individuals located near to the Good Grounds, cannot do better than meet and thoroughly discuss the situation, and make prompt arrangements for the securing of at least a limited number of birds to replace some of the many which must have perished. Remember that very few pairs of healthy Bob Whites will suffice for the re-stocking of grounds of medium area, as under average conditions, a single pair is good for from eight to near twenty young in a single season. If I could get hold of twenty birds, half of each sex, I should divide them, putting five cocks and five hens into one coop, and the remainder into a second. The coops should be placed where they would be safe from possible invasion by rats, and be well supplied with sand, water and food—the most convenient probably being small corn and wheat mixed. I have kept Bob Whites for six weeks and more in this way, and then turned them out in tip-top condition. As a receptacle for the grain, I used an old baking-pan which was filled to the brim, and not meddled with till the supply began to run low. The less fussing with the birds the better, a brief daily inspection being all that is necessary. They will eat the grain all right, and providing they are not scared by a reckless approach, they will seldom attempt to use their wings. If alarmed, they are apt to dash against the sides and top of the coop, and so injure themselves.

The very best ground upon which to release them is the place which formerly yielded the best shooting early in the season. The reason is simple enough. The partial migration of the Bob White, frequently is nothing more than a shifting from the summer to the winter quarters, and this usually takes place about the opening of the shooting season, hence it has no bearing upon the mating and nesting periods. The fact of native birds having selected certain breeding-grounds is ample warrant that the same grounds should admirably serve for the transplanted stock. In point of fact, the new birds will behave precisely as did the old, nest near, or actually in the old spots, and upon the approach of cold weather, shift to the covers favored by their predecessors. The time for releasing them is as soon as possible after the opening of gunning spring. A tested method of transporting the birds is as follows: Late in the afternoon, darken the front of the coop with a bit of old carpet, or horse-blanket, carefully place it in the rig and drive to some farm-yard near the breeding-grounds. After dark, quietly remove a couple of slats from the front of the coop, put in a double supply of grain, replace the carpet, and softly carry the coop to the best of the near-by small cover—the briery angle of a rail-fence is a first-rate place. Place the coop in the cover, then so soon as all's quiet within, carefully remove the blanket, and leave the birds to their own devices. It is unlikely that one of them will attempt to stir before sunrise. Then they will rouse, feed and presently discover they are back to the wild, and free to step forth whenever so disposed. This is exactly as it should be, for they will hang together for a period, and otherwise behave as would a bevy that had wintered on the spot. In all probability they will not wander far from the coop for some days, during which period they should not be disturbed. This plan I think is better than breaking the lot up into pairs, and releasing one pair here and there over a large area, because it is what the birds naturally do. They will fight and scatter fast enough when the pairing begins, which with southern birds, is apt to be a bit earlier than the average of the north.

The one thing better than this transplanting, is the preservation of what native birds may be left. It is to be hoped that the men on the shooting grounds will spare no effort to save even a remnant of the natives for, after all, one strong pair reared on the spot is better than twice that number brought from perhaps a great distance southward.

DO ANIMALS REASON?

By JOHN BURROUGHS

APROPOS of the question, "Do animals think?" a correspondent, writing from Washington, says that I deny this power to the lower animals because I use the word in a too-restricted sense. He then proceeds to say that if we use the word "chin" to signify "exclusively a portion of the human face, meaning that portion which is extended *perpendicularly* downward from the mouth, we would hesitate to say that the lower animals have chins. So if we define 'laugh' as spreading the mouth in merriment we could not say that animals laugh."

I am quite ready to admit that animals think in as strict a sense as they have chins or as they laugh. A feeling of play and merriment they certainly have, but this feeling is practically entirely physical. I don't suppose an animal could appreciate a joke, or the comic, or the absurd. Man is the only animal that laughs or weeps, though tears may run from the eyes of a suffering beast. And the chin of a bird or beast is a very rudimentary affair indeed.

Take the case of the little yellow warbler when the cow-bird drops her egg into its nest—does anything like a process of thought or reflection pass in the bird's mind then? The warbler is much disturbed when she discovers the strange egg and her mate appears to share her agitation. Then after a time, and after the two have apparently considered the matter together, the mother bird proceeds to bury the egg by building another nest on top of the old one. If another cow-bird's egg is dropped in this one, she will proceed to get rid of this in the same way. This all looks very like reflection. But let us consider the matter a moment. This thing between the cow-bird and the warbler has been going on for innumerable generations. The yellow warbler seems to be the favorite host of this parasite, and something like a special instinct may have grown up in the warbler with reference to this strange egg. The bird reacts, as the psychologists say, at sight of it, then she proceeds to dispose of it in the way above described. *All yellow warblers act in the same manner*, which is the way of instinct. Now if this procedure was the result of an individual thought or calculation on the part of the birds, they would not all do the same thing; different lines of conduct would be hit upon. How much simpler and easier it would be to throw the egg out—how much more like an act of rational intelligence. So far as I know no bird does eject this parasitical egg, and no other bird besides the yellow warbler gets rid of it in the way I have described. I have seen a green-backed warbler rearing the young cow-bird.

Another correspondent is sure his dog thinks when he sits up in front of him while he is reading, and taps him on his back or leg as a reminder that he wants that ball in his master's pocket to play with; and that his parrot thinks when, on hearing him enter the house, it begins savagely to bite its cage and to make hideous noises, all with a view to obtaining its freedom, so that it can make its way to its beloved master, and caress him and play with him. If such things indicate powers of thought, then nearly all animals think. The bee does when it goes forth from the hive in quest of honey; the big mid-summer spider does when it shakes its net to frighten you away; the mother bird does when she flutters over the ground at your feet to decoy you away from her nest, etc. But none of these acts can properly be called the result of thinking.

When a parrot takes a cracker or a crust of bread and soaks it in its cup of water before eating it, that looks much more like the result of a mental process.

MIMICRY

To what lengths this protective resemblance theory is pushed by some of its expounders! Thus, in the neighborhood of Rio Janeiro there are two species of hawks that closely resemble each other, but one eats only insects and the other eats birds. Mr. Wallace thinks that the bird eater mimics the insect eater, so as to deceive the birds, which are not afraid of the latter. But if the two hawks look alike would not the birds come to regard them both as bird eaters, since one of them does eat birds? Would they not at once identify the harmless one with their real enemy and thus fear them both alike? If the latter were newcomers and vastly in the minority, then the ruse might work for awhile. But if there were ten harmless hawks around to one dangerous one, the former would quickly suffer from the character of the latter in the estimation of the birds. Birds are instinctively afraid of all hawk kind.

Wallace thinks it may be an advantage to cuckoos, a rather feeble class of birds, to resemble the hawks, but this is another matter. If the sheep could imitate the wolf its enemies might keep clear of it. Our cuckoo is a feeble and defenseless bird also, but it bears no resemblance to the hawk.

Many of these close resemblances among different species of animals, are no doubt purely accidental, or the result of the same law of variation acting under similar conditions. We have a humming-bird moth that so closely in its form and flight and manner resembles a humming bird, that if this resemblance brought it any immunity from danger, it would be set down as a clear case of mimicry. There is such a moth in England, too, where no humming bird is found.

Why should not Nature repeat herself in this way? This moth feeds upon the nectar of flowers like the humming bird, and why should it not have the humming bird's form and manner?

Then there are accidental resemblances in nature, such as the often-seen resemblance of knots of trees and of vegetables to the human form, and of a certain fungus to a part of man's anatomy. We have a fly that resembles a honey bee. In my bee-hunting days I used to call it the "mock honey bee." It would come up the wind on the scent of my bee box and hum about it precisely like a real bee. When looked at closely it resembled a drone more than a worker bee. Of course it was here before the honey bee and has been evolved quite independently of it. It feeds upon the pollen and nectar of flowers like the true bee, and is, therefore, of similar form and color. The honey bee has its enemies; the toads and tree frogs feed upon them, and the king bird captures the slow drone.

When an edible butterfly mimics an uneedible or noxious one, as is frequently the case in the tropics, the mimicker is no doubt the gainer.

It makes a big difference whether the mimicker is seeking to escape from an enemy, or seeking to deceive its prey. I fail to see how, in the latter case, any disguise of form or color could be brought about.

Our shrike, at times, murders little birds and eats out their brains, and it has not the form, or the color, or the eye, of a bird of prey, and thus probably deceives its victims, but there is no reason to believe that this guise is the result of any sort of mimicry.

My son Julian furnishes me with the following account of

A WOOD DUCK'S NEST

which our hired man found last summer:

"Several times I paddled up and down past the 'Hog's Back,' before I could locate the tree that had the wood duck's nest. Many trees in the great swamp along the flooded, black stream answered the description the hired-man had given me, and it was only by chance that I found the one at last: a small swamp maple with a round hole, almost as big as a stove-pipe, about seven feet from the ground. Pulling the boat out in the fern-choked swamp, I climbed up the tree and looked in. And what a pretty sight! The mother wood duck was hovering her precious eggs, her two luminous black eyes, with their circle of white, gazing up into mine in wide alarm, her shining plumage of brown and bronze and yellowish-green reflecting back the light from the opening above. She drew back her head and defied me in a low, yet soft, hissing sound. For an hour I tried to tie or hold my camera so as to get a picture of her, but in vain. It was nearly a week before I could come back and then the ducks were gone. Just below the Hog's Back I found both the parent ducks sitting on a log that lay across the stream and I suppose the young were there too. In the nest were some feathers the devoted mother had picked from her breast, and the skins of all the eggs.

"It has so long been a disputed question how our wood duck gets her young from the nesting tree to the water, and so many different explanations have been offered, that I now examined this nest with particular care in regard to that question. Andre, in his 'A Naturalist in the Guianas,' says the wood duck there builds in a hollow stump and forces the young ducks out, taking care that they fall in the water. A writer in OUTING, a year or so ago, says he has seen the young climb out by themselves. Others maintain that the old duck carries them in her bill to the water, and others that she takes them on her back. Mr. William Brewster, of Cambridge, Mass., watched the nest of the American Golden Eye and saw the exit of the young: the old duck sat in the water under the tree and after watching for some time to see if the coast was clear, she uttered a peculiar *squack*, whereupon all the young rushed forth and fell in a yellow stream into the water below. But the water is sometimes at a distance. Even in such cases it seems as if the young ducks jumped out. A friend of mine found a young wood duck caught by his neck in the forks of a bush under a tree where the wood ducks had their nest. For some years a wood duck has nested in the very top of a giant pepperage tree, at Slab Sides, so far from the ground that it seems impossible for the young to have jumped out. One day the mother and all her brood were found in the spring under the tree. This would look as if she certainly did not carry them, directly, at least, to the creek, which in this case was over half a mile away.

"The nest, or rather cavity, which I examined on Black Creek that day, settled one thing—in this case, at least, the mother must have helped them out, for it would have been impossible for young ducks to have climbed out by themselves. From the edge of the opening to the nest was two feet or over—so far that it was with difficulty that I was able to reach the nest, even with my arm thrust, shoulder and all, far into the hole—and for over half the distance the sides were more than perpendicular. Not only that, but they were surprisingly smooth and hard and offered no nail or bill hold for any duck. Once to the top, however, the young ducks could easily have jumped to the ground and run to the water, only a few feet away.

"The only conclusion we can draw is that the way in which young wood ducks get to the water varies with the location and form of the nest. At any rate, it is a disputed point and different observers have seen different things."

DO ANIMALS REASON?

By C. F. DEACON

[There is much discussion among our readers apropos of Mr. John Burroughs' articles on the reasoning of animals. Many, taking a directly opposite view from him, believe that animals are not governed by instinct alone. We print the following communication from among many received, as being the most clearly expressed opinion of those disagreeing with Mr. Burroughs' well-known views.]

IF we contemplate our own minds, we have an immediate cognizance of a certain flow of thoughts or feelings. But if we contemplate mind in other persons it is not so. We can only *infer* the existence and the nature of thoughts and feelings from the activities of the persons which appear to exhibit them. Similarly, wherever we find an animal able to learn by its own individual experience, we have the same right to predicate mind as existing in such an animal that we have to predicate it as existing in any human being other than ourselves. For instance, a dog has always been accustomed to eat when hungry, and food was at hand. That may be due to reflex action alone. But now suppose that the dog has been taught not to eat until he receives a certain signal; then we have exactly the same kind of evidence that the dog's actions are prompted by mind as we have that the actions of a man are so prompted. For instance, Prof. Romanes said his friend, Prof. Gerald Yeo, had a terrier which was taught to keep a morsel of food on its snout till it received the verbal signal "Paid for," when it immediately tossed the food into its mouth. Romanes thought it worth while to carry the case farther, and while the dog was expecting the signal, said "Pinafore"; the dog gave a start and very nearly threw the food off his nose, but immediately arrested the movement, evidently perceiving his mistake. This experiment was repeated many times and always with the same result. Similarly, Sir Walter Scott says of his bull terrier:

"The servant, when laying the cloth for dinner, would say to the dog, 'Camp, my good fellow, the sheriff's coming home by the ford,' or by the hill; and the dog would at once go forth to welcome his master, advancing as far and as fast as he was able in the direction indicated."

Romanes tells of a chimpanzee at the Zoological Gardens in London that had learned from its keeper the meanings of so many words and phrases that the keeper was able to explain to the animal what he wished her to do. For example, she would push a straw through any particular meshes in the net-work of her cage which he indicated by such phrases as "The one nearest your foot; now the one next the key-hole; now the one above the bar," and so on. Of course there was no pointing to the places designated, nor any order observed in the designation. The animal understood what was meant by the words alone, and this even when a particular mesh was named, by the keeper remarking to her the accident of its having a piece of straw already hanging through it. She was also taught to count up to five, being asked for one straw, two straws and so on, without observing any order in the succession of such requests. If asked for four straws, she successively picked up three straws and put them in her mouth, then picked up the fourth straw, and handed over all the four together. Such proficiency is not attained by a civilized child for several years, and Galton tells of the Dammaras that

"each sheep must be paid for separately; thus, suppose two sticks of tobacco to be the rate of exchange for one sheep, it would sorely puzzle a Dammara to take two sheep and give him two sticks."

Thus it would appear that the mind of man in childhood or in savagery is not by any means so superior to that of the higher animals as is claimed by some. Such animals are speechless by reason of an anatomical accident, and not from an absence of ideas or ignorance of words; yet the faculty of understanding words in so considerable a degree brings us to the very border of the faculty of using words with an intelligent appreciation of their meaning. Now this is a fact of extraordinary significance, proving that language and thought are not confined exclusively to mankind. But, on the contrary, the higher animals share with us the capacity to understand words—and words, moreover, so definite and particular in meaning as is involved in explaining the particular mesh in a large piece of wire-netting. It would seem, therefore, that if these animals could articulate, they would employ simple words to express simple ideas. For it would not involve the exercise of any higher mental faculty to say the word "Come," than it does to pull at a dress or a coat to express the same idea; or to utter the word "Open," instead of mewing before a closed door.

The case of talking birds does not disprove this argument, for birds are lower in the psychological scale than dogs, or cats, or monkeys; nevertheless, even here the evidence is favorable. Taking first the case of proper names, it is unquestionable that many parrots know perfectly well that certain names belong to certain persons, and that the way to call these persons is to call their appropriate names. Romanes knew a parrot which used to call its mistress as intelligently as any other member of the

household; and if she went from home for a day, the bird became a positive nuisance from its incessant calling for her to come.

And in a similar way parrots often learn to correctly assign the names of other pet animals or even of inanimate objects. Darwin says:

"It is certain that some parrots connect unerringly words with things and persons with events. Admiral Sir J. Sullivan, whom I know to be a careful observer, assures me that an African parrot, long kept in his father's house, invariably called certain persons by their names. He said 'Good-morning' to every one at breakfast, and 'Good-night' to each as they left the room at night, and never reversed these salutations. He scolded violently a strange dog which came into the room through an open window, and he scolded another parrot that had gotten out of its cage and was eating apples on the kitchen table."

"Dr. Samuel Wilkes, F. R. S., said of his own parrot, which he carefully observed:

"When I enter the house he recognizes my footstep and will repeat one of my sayings. If the servants enter the room Poll will be ready with one of their expressions, and in their own tone of voice. It is clear that there is a close association in the bird's mind between certain phrases and certain persons or objects, for their presence or voice at once suggests some special word. For instance, my coachman, when coming for orders, has so often been told half-past two, that no sooner does he come to the door than Poll exclaims, 'Half-past two.' At dinner-time the parrot, having been accustomed to have savory morsels given her, I taught her to say, 'Give me a bit.' This she now constantly repeats, but only and appropriately at dinner-time. Again, being very fond of cheese, she easily picked up the word, and always asks for cheese toward the end of dinner, and at no other time."

Now this faculty of correctly using words and phrases is precisely the same as that whereby children first learn to talk; for, like the parrot, the infant learns by direct association the meanings of certain words (or sounds) as denotative of certain objects, expressive of certain desires, actions, and so on. The only difference is that in a few months after its first commencement in the child, this faculty develops into proportions far surpassing those which it presents in the bird, so that the vocabulary becomes much larger and more discriminative. If dogs and monkeys were able to talk, we have no reason to doubt that their use of words and phrases would be much more extensive and striking than that which occurs in birds. Or as Huxley observes:

"A race of dumb men, deprived of all communication with those who could speak, would be little indeed removed from the brutes. The moral and intellectual differences between them and ourselves would be practically infinite."

Commander A. Carpenter, R.N., tells us how monkeys in South Burmah eat oysters:

"The rocks at low water are covered with oysters. The monkeys select stones of the best shape for their purpose from shingle of the beach, and carry them to the low water mark, where the oysters live, which may be as far as eighty yards from the beach. This monkey has chosen the easiest way to open the rock-oyster, namely to dislocate the valves by a blow on the base of the upper one, and to break the shell over the attaching muscle."

Leroy, whose life's work was that of Ranger at Versailles, tells of crows which it is desired to shoot upon their nests, in order to destroy birds and eggs at the same time. The crows will not return to their nests during daylight, if they see any one waiting to shoot them. If, to lull suspicion, a hut is made below the rookery and a man conceals himself in it with a gun, he waits in vain if the bird has ever before been shot at in a similar way.

"She knows that fire will issue from the cave into which she saw a man enter. To deceive this suspicious bird, the plan was hit upon of sending two men into the watch-house, one of whom passed on while the other remained; but the crow counted and kept her distance. The next day three went, and again she perceived that only two returned. In fine it was found necessary to send five or six men to the watch-house in order to put her out of her calculation."

As to the intelligence of ants, Mr. Belt says:

"A nest was made near one of our tramways, and to get to the trees the ants had to cross the rails, over which the wagons were continually passing. Every time a wagon came along a number of ants were crushed to death. They persevered in crossing for some time, but at last set to work and tunneled underneath each rail. One day I stopped up the tunnels with stones; but although great numbers carrying leaves were thus cut off from the nest, they would not cross the rails, but set to work making fresh tunnels underneath them."

Sir John Lubbock says that the bees of the genus Osmia arrange their cells in a row, and that the cells furthest from the entrance always contain females, while the outer cells always contain males. There is an obvious advantage in this, because the males come out a fortnight or more before the females, and it is, of course, convenient that those which have to come out first should be in the cells nearest the door. M. Fabre arranged a number of glass tubes of which the Osmias gladly availed themselves, and in which they proceeded to construct their cells. The tubes were so arranged that each was in two parts, an outer portion wide enough for a female cell, and an inner narrower portion just large enough for a male cell. What happened? Some of the Osmias shut off the narrow ends, and used only the outer and wider portion. Others built also in the narrow part of the tube, and under these circumstances, contrary to the otherwise invariable rule, the inner cells contained males. M. Fabre concludes that these privileged insects not only know the sex of the insect which will emerge from the egg they are about to lay, but that at their own will they can actually control it! Certainly a most curious and interesting result!

Darwin says that even the oyster seems to profit from experience. That oysters taken from a depth never uncovered by the sea, open their shells, lose the water within, and perish; but oysters taken from the same place and depth, if kept in reservoirs, where they are occasionally left uncovered for a short time, learn to keep their shells shut, and then live for a much longer time when taken out of the water. This is carried out on the French coast in so-called "oyster-schools." When the lesson is learned, the oysters are sent to Paris, where they arrive with closed shells and in a healthy condition.

THE DECADENCE OF THE GRAYLING

By WILLIAM C. HARRIS

IN the October issue of OUTING congratulations to the anglers of the country were extended upon the anticipated re-appearance of the grayling in their former numbers in the waters of Michigan. The authority for this statement was based upon a reported large catch of these fish by an angler of Philadelphia, who fished one of the western streams of Michigan. These anticipations had no basis of justification, which will be evident from the letter of Dr. Bennett, of Boyne City, Mich., printed below, who lives close to some of the old grayling streams, and despairs of their resuscitation in any of the waters of their native State. He attributes the decrease to the ravages of the speckled trout among them, while many authorities, such as the Fish Commissioners of Michigan, as I am informed, lay the charge, first, upon the lumbering in the spring of the year, the logs scraping and destroying the spawning beds of the grayling, which is a spring-breeding fish; secondly, to the rainbow trout, which thrives in Michigan waters and grows to a large size. (I caught them eight years ago in the Au Sable river, twelve miles above the town of Grayling, Mich., weighing three pounds.)

Although one of the best of game fishes, if not the superior of all other salmonids living in relatively small streams, the rainbow (which has been caught near Caledonia, N. Y., weighing nearly fourteen pounds), with its ravenous appetite and vigorous foraging habits, will, when put in streams with the red-spotted trout (*fontinalis*), be likely to decimate them and all other fish of relatively small size, including the delicate grayling with its tender body and non-combatant habits. Dr. Bennett writes:

"Twenty-five years ago the Jordan river was an ideal trout stream, but not a grayling was seen or caught out of it during those years, and yet those who first fished it say that in their time there was nothing but grayling, and that they began to go when the trout came, and were gone before any logging operations were begun upon the river.

"The first week in June, 1901, I spent upon the Black river, a stream some ten miles east of the Pigeon, mentioned by Mr. Harris in his article. At that time the Black was fairly alive with grayling, big and ravenous, and it required a strong effort of self-denial to keep us from catching fish for which we had no use.

"This summer (1904), about the first of June, with the same party and over the same reach of the stream—which, by the way, was about ten miles of river—I fished eight days and only saw three grayling—one caught by myself and the other two by a man from Gaylord, Mich.—while trout were all that a man or sportsman could desire. Now during the years from 1891 to 1894, there was very little logging done upon the Black; in fact, not a tenth part as much as was done from 1895 to 1901. So, in that instance, like the one I mentioned of the Jordan, I do not see how the almost entire extinction of the grayling could be attributed to log running.

"The history of all the other trout streams, as far as I am able to learn, is the same as the two that I have mentioned. That is, the grayling was the first settler. Some years later came the trout, after whose advent the grayling soon began to be numbered with the things that were, and a catch like the one mentioned by Mr. Harris' Philadelphian would be a very rare thing, indeed, and his correspondent's assertion that there has been an increase of grayling recently in the streams of northern Michigan I do not think can be substantiated by facts."

That the status of grayling in Michigan waters might be settled authoritatively and officially, although Dr. Bennett's letter removed all doubt from my mind, correspondence with the Fish Commissioners of Michigan was commenced, and the annexed official letter from Mr. Seymour Bower, the Superintendent of Hatcheries of that State, fully corroborates the statements of Dr. Bennett:

"I beg to say, and with regret, that the grayling is almost extinct in this State; that is, the native stock. We have made quite liberal plantings of Montana grayling in the head waters of the Manistee river the past two seasons, and have reports that considerable numbers of small graylings (of that species) have been observed there, but just what the outcome will be cannot be stated just yet. We are hoping and trying to re-establish the grayling in a few of the best streams, such as the Manistee, which is now a good brook trout stream, but is free from rainbows. Where the latter are firmly intrenched, as in the Au Sable, it would be useless to undertake to make any headway with the grayling; though, as you doubtless know, this was once a famous grayling water.

"Seven or eight years ago light catches of grayling were possible in Bear creek, and the Maple and Au Sable rivers, but they are now practically, if not actually, extinct in these streams. Up to four or five years ago fairly good catches of grayling were occasionally made in the Manistee, but one would not now be at all certain of taking a single specimen there in a day's fishing under favorable conditions. From all

I can learn, I think that a catch of five grayling in one day would be a remarkably good one from the Manistee at present, and this is undoubtedly the best grayling water we have left in Michigan to-day. Two years ago last June Mr. Grant M. Morse, then State Warden, and myself, with two boats and guides, ran some eighty to one hundred miles of the Manistee, taking five days of it, and covering all of the best grayling territory. We had fairly good success with trout, but took only one grayling apiece. And we were out for grayling rather than trout. It is true that the weather conditions were not very favorable, but from our own experience and what we could learn from guides and other fishermen we concluded that the grayling was a pretty scarce article.

"It was a great mistake that the taking of grayling was not absolutely prohibited some seven or eight years ago, for a ten-year term, while a remnant remained in several streams, and when the lumbering interests had practically ceased to be a factor. I may be over pessimistic, but I cannot see a future for the grayling in this State, unless the introduction of Montana grayling proves a success. It may be a case of locking the barn after the horse is stolen, but we shall probably endeavor to have a ten-year prohibitory bill passed at the next session of our legislature."

A letter from Mr. F. B. Dickerson, President of the Michigan Fish Commission, fully corroborates the experience of Mr. Bower, the Superintendent. He writes that "only one grayling has been caught in the Au Sable for several years past, and that river was formerly a famous one for them." He also writes:

"Surely the grayling are not on the increase, unless it should develop that the Montana grayling, which have been planted in the Manistee for the last two to four years, show up well."

About twenty years ago I had an outing of a few days on the Gallatin river, at least fifteen miles above Three Rivers, Montana. The river at that time was virgin water, for I was assured by the residents that they had never known it to be fished; certainly not with artificial flies, so far from the town. As I have stated somewhere before, at the first cast of the feathers, the water seemed fairly to boil, over an area of ten feet at least, with the shouldering grayling in their eagerness of feeding. Among the rising fish were the black-spotted (cut-throat) trout and the river whitefish, the latter being the least in numbers; the three species were living, apparently, in perfect harmony, and in pools not more than fifty feet in width and one hundred in length, and in these confined waters food was evidently scarce, for the fish rose to the surface for the flies as if in a half-starved condition. No better evidence could be found that the grayling of Montana will hold its own against that sturdy trout, the cut-throat, a fish, in my opinion, of more robust life than the charr-trouts of the Eastern waters.

While no doubt can exist as to the Montana grayling thriving, provided the waters suit them, in the streams of Michigan, their introduction and increase will not fill the angling void left by the disappearance of the native species, which, singularly as it may seem, charmed the senses of the angler into a less combative mood, even when in full fight on the rod, with their bodies of silver and their broad, iridescent dorsal fins, aslant and surging in desperate efforts for liberty. It cannot be questioned that there was a something about this fish that caused you to do as Old Izaak bade you do with all, "to handle them as if you loved them."

It is to be regretted that President Dickerson and Mr. Bower did not tell us of the chances of success in the plant of Montana grayling in Michigan streams. Between the lines of their letters there seemed to be a doubt inferred as to the outcome of the plant. Surely "four years" since the first stocking is time sufficient to definitely settle the matter.

NOTES AND QUERIES

J. B. G. is informed that the names "Lafayettes" and "spots," as given to that delicious fish of the Croaker family, are synonymous. The name "Lafayette" was said to have been given them because they re-appeared in New York City waters in large numbers in 1834, the year of General Lafayette's second visit to this country. The name "spot," is most appropriate, owing to the pronounced dark spot or blotch just behind their gill covers.

"H" of New York City wants to know the dressing of the "Cheney" fly, so called after the lamented A. N. Cheney of the New York Fish Commission: The tag is silver; tail, a fibre of woodcock and one of green parrot; body, posterior half, lemon yellow silk wound with silver tinsel, and the anterior half, maroon chenille; hackle, yellow; wings, whole feather of duck which shades from gray at head to white in middle, and terminates with black tip; head, green silk.

Many letters continue to be received discussing "the leap of the trout," and through them, I see that I have not been sufficiently explicit in the query "Do trout leap on a slack line?" A black bass frequently, when first hooked, swims, sometimes rushes, toward the rod holder, whether he is in a boat, wading, or on the shore; the brook trout (*fontinalis*, of course) less frequently does so. Under such conditions there is naturally, a looping, at least, "a slack line," and the leap of the fish is a voluntary one. I have never seen this done

by a trout in running water, and the communications of many earnest and observant anglers has not only been a source of education to me, but encourages the belief that anglers are becoming more inclined to commune one with the other, and to help the younger craftsmen through their own practical and more extended experiences. Of such are anglers made.

WHY FISH ARE UNDERSIZED

The following letter of inquiry is of interest:

"I know of a lake in this State (Mass.) which is full of small-mouthed black bass and has been so for years, the average weight of which is about half-a-pound. The lake is full of red (?) perch, sunfish, minnows, etc., and the bass are game and numerous, taking the artificial fly freely. Now, why don't they grow biger? There is plenty of range for them, the lake being ten miles long. In several lakes nearby the bass average is at least two pounds, and what is most strange, they have all been stocked from the lake in which the bass are small."

This is rather a remarkable condition, the like of which, in all the details, but seldom exists in such strong contrasts of weight, in waters inhabited by black bass. It is not, however, of infrequent occurrence in lakes containing brook trout (*fontinalis*), of which a striking instance occurs in Edmond's ponds in Essex county, N. Y. There are three of these, and in one of them, which was a few years ago and probably at this time, is still swarming with trout, the fish never exceed half-a-pound in weight, although their range is an extended one and their food plenty. There would seem to be but one explanation of this singular condition: The fish were dwarfed in growth by the chemical constituents of the water in which they lived, or through heredity. Seth Green, who was the earliest pioneer in commercial fish culture in America, and one of the most practical and studious observers of fish habits, when a case somewhat similar to the above was presented to him, thought the small but uniform size of the fish was owing to a scarcity of food, and recommended the planting of smelt and "sawbellies"—the latter one of the spring-hatching herrings. He believed the lake of small fish was simply overstocked with bass. The surprising increased growth of the small fish referred to by our correspondent when they were placed in adjoining lakes, is not an unusual condition, for it has been noted during many years of observation that changing the habitat of some species of fish, notably the carp, has given not only a more rapid and increased growth, but added vigor of health and greater gameness when restrained by the rod of the angler.

CASTING FROM THE REEL.

Mr. J. Winchell Forbes, of Cincinnati, Ohio, sent me recently a very interesting communication on the conditions existing in his home city as to the education and practices of the resident anglers, with many practical hints as to rods, tackle and the methods of using them, from which is excerpted the following on casting from the reel:

"The art of long-distance casting cannot be mastered by everyone, and that those for whom its mastery is possible, will do well not to spread themselves over too much ground, but select certain peculiarities as to tackle and method, and stick to them exclusively. I have known anglers who have grown gray in the profession, to fail utterly in learning to cast a paltry fifty feet, and then again I have known people who were able to send an ounce sinker singing through the air to a distance of a hundred, after a few trials, but who would try to lift a ten-pound fish out of the water by main force. Neglecting this fact, however, my experience has shown me that the art of long-distance casting depends upon the factors, weight of line, weight of sinker, reel action, muscle, and the faculty of using the muscle in such a manner that the impetus is given to the sinker gradually, and not abruptly. To these should be added the nature of the line, whether hard or soft, and the material and the length of the pole.

"It is usually supposed that the longer the pole, the longer the possible cast, and that idea is supported by the laws of mechanics; but as no man can give the force to the tip of a twelve-foot rod that he can to the one of six feet, the supposed advantage of increased leverage fails to count. In this locality, the six-foot pole is taking the place of all others.

"Another item which should be mentioned, is the nature and number of the line guides. The first one should be at least a half inch in throat, and placed at some distance from the reel, so as to flatten the angle at which the line enters it; the others should be in number and place, according to the particular rod; the idea being to so place them that the friction in casting will be reduced to a minimum and that when reeling in a fighting fish, the side pull on the rod will be at points which will cause it to bend symmetrically as a whole, and not at certain points only. It is an exceptional rod that will bend naturally, so as to give that velvety feeling to the wrist that is so pleasant to the angler; but the most woodeny ones can be improved by a proper placing of the guides.

"Long-distance casting in all three forms, is a valuable art, when its practice is confined to its proper field, at the water side; but when it is reduced to the simple question of throwing a pellet of lead at a dry-land tournament, anglers should remember that any boy can discount their best efforts with a sling-shot, and double discount them with a cheap rifle."

ADVICE TO DOG OWNERS

By JOSEPH A. GRAHAM

SINCE OUTING published a note commending the Airedale for various good qualities, with the qualification that his fighting abilities need watching, I have received a number of letters, some inquiring about Airedales, and some protesting that this terrier is not quarrelsome.

Nobody said that the Airedale is quarrelsome. Here is a point of discrimination which should be borne in mind. Some of the most harmless dogs are most bustling and seemingly quarrelsome. It happens that the breeds which do the heaviest fighting are quite as often the slowest to begin. A bulldog is likely to be a good-natured old clown. He may pass amiably through life without hurting anything, provided, always, that he is not crowded.

The Airedale is rather a quiet and sober-sided fellow, much in the habit of concentrating his friendship on one man and attending to his own business. All this goes well as long as he is not aroused. The trouble is that when a bulldog, bull terrier or Airedale does begin to fight, he does not quit until he hurts something or gets himself badly damaged.

Under many circumstances this is a supreme virtue; but, when other people have quarrelsome little dogs roaming about within the Airedale's territory, two or three of them a year are likely to be well prepared for a stay at the nearest dog hospital.

Occasionally, also, an idiotic boy, or even man, will intrude liberties which call for hostilities. A hound, setter, fox terrier or collie might take it out in barking. A bulldog or an Airedale might dismiss the loud language altogether, and make a considerable piece of live meat the spoils of war.

Every man who has kept dogs knows something of these troubles. The amateur readers of the OUTING who are inquiring about the Airedale can decide for themselves on this statement of facts. For myself, I can only repeat that, if I were not specially interested in shooting dogs, I should prefer the Airedale to any other dog friend.

Amateurs should not undertake to give many kinds of medicine to animals. When people ask me what medicine I recommend for their sick dogs, I rarely go beyond castor oil or salicylate of soda. The professional kennelman, or veterinary, ought to have charge if complicated diseases are to be treated.

A dog does not like castor oil. The best way to administer it is for one person to lift the dog's nose up, holding the jaws together tightly and pulling out the loose skin into a pouch at the corner of the mouth. Another person can pour in the dose and the dog will almost certainly swallow it if his jaws are held together.

Salicylate of soda has a sweetish taste, and almost any dog will take it without objection if it is rolled up into a ball with damp bread. I usually give it that way, holding a small piece of meat in my hand and putting it in the dog's mouth immediately after the pill. From five to ten grains of the soda can easily be kneaded into a comparatively small ball of bread.

Speaking of fighting dogs, I might suggest the point that real fighters cannot be successfully kept together in a kennel. Here is one of the disadvantages of breeding bulldogs or Airedales on a large scale. They might go along for many months without disturbance; and then, when things break loose, the owner might discover that he had a number of badly disfigured animals.

As an illustration of having fighters in company with other dogs, I might mention the case of the famous setter, Cowley's Rodfield's Pride. This dog is one of the very few setters which are actual fighters. Within the last year he has seriously injured three other dogs, though Rose, the trainer, has been using his best endeavors to keep him in separate quarters.

As in giving medicine, so in training, the beginner does best by confining himself to one or two necessary accomplishments. Some time ago I explained that if an amateur who is training his first dog would do nothing more than teach the animal to stop at command, he would have better success than if he endeavored to follow elaborate training directions. I have been watching this point closely during the past season. Though I was already convinced, I found myself still further surprised at how good a shooting dog an animal becomes when no effort has been made to teach him anything but this one act of obedience. Except retrieving, pretty nearly everything in practical shooting bases upon this particular response to command. Pointing and backing are perfected only by experience in the field. This is true of any dog under any system of training. Nor would I at any time say that a man had a finished shooting dog when he had enforced only the habit of invariably stopping for orders. But I do say that, as amateurs go, and as everyday shooting dogs go, the man who has inculcated this habit with reliability has a more comfortable shooting dog than nine out of ten which he will run across through the country.

In getting a dog ready for a bench show, the amateur often is compelled to rely upon himself, and perhaps still oftener must do a lot of preliminary preparation, sending the dog to the professional handler only a week or so before the show.

A great many directions have been given

in the books about putting a dog into condition. Condition is valuable and necessary, but in practical exhibiting I am inclined to think that there is another quality which will carry a dog further than condition. It is carriage, style and position in the ring. Unless the condition is actually bad, the judge will make considerable allowance in the case of a really good dog; but he cannot do much with one which crouches, ties himself up and wears that woe-begone or dazed appearance which so many new dogs take into the ring.

The amateur exhibitor ought to make his dog feel easy in leading. And he should every day place the animal in proper show position and make him stand firm a few minutes.

A dog should also be accustomed to being taken around in the company of other dogs and people. I know an exhibitor who leads his dogs every day or two to the St. Louis Union Station, where the hurrying crowds and noises soon accustom them to almost anything.

Bright, merry movement and ease under handling are in the show ring at least as valuable as condition.

The man who is thinking of collies as sheep dogs or companions must begin to be careful. It is now definitely understood that the Borzoi has been used as a cross in English kennels to produce the long, narrow head at which collie extremists have been aiming. In mental quality the Borzoi is as far away from the collie as it is possible for a dog to be. The gifts and disposition of the collie must necessarily be injuriously affected by this cross.

I would not speak of this to the disadvantage of the collie except that the proof seems to be accepted by collie fanciers as unmistakable. The cross has been developed in some of the most fashionable bench show families. It shows the dangers of extreme breeding for fancy points.

I do not know that it is the business of anybody except the breeders and exhibitors as long as the merits of the collie are declared to be what the eye can see in the ring. But there are a great number of innocent people who believe that any well-bred collie is a great herder of sheep and has the other traditional virtues of the breed. It is well that they should know what is doing.

Last season a number of cases of kennel lameness or rheumatism developed in the field trial strings. The authorities have been hunting up the cause, and they begin to talk about taking care of field dogs after public heats or severe exercise. This is good, though it is twenty-five years in coming. A man who has been familiar with racehorses or greyhounds is shocked at the neglect of otherwise competent and intelligent field trial handlers. I saw last fall a dog, which was just then being sold for $1,250, kept standing for nearly an hour in the cold wind just after he had run a tremendous heat of two hours. After thus standing, he was put in a crate and driven four or five miles to town, without a blanket or other covering.

It is the simplest kind of common sense that after severe exercise a dog should be walked until he is cooled off. Whether a blanket is desirable in the case of a field dog I am not absolutely certain; but, at least, I think it could do no harm.

This cooling out of a dog takes work and time, and, perhaps, additional helpers; but the field dog handlers must come to it, because owners cannot afford to have a thousand-dollar dog ruined for lack of a dollar's worth of attention.

Mr. Redfield has been writing some articles on "Dynamic Development." His thesis is that puppies should be bred from old dogs which have had a long period of active work. His articles are full of interest, but I am compelled to take an entirely opposite position. In this I feel the more confident because I have just had a talk with one of the oldest and most successful Canada breeders, and he agrees with me here. Moreover, he cites the advice privately given to him some years ago by England's oldest and most respected public handler of field dogs. I am satisfied that the tremendous expenditure of force in constant public training diverts a large part of a bitch's energies from the maternal processes of nutrition, which are the basis of successful production and nursing. Unless I could not get the blood and prospects in any other way, I would not have a puppy out of a dam more than six or seven years old. Probably age, old or young, makes much less difference in the case of a sire, but I cite the fact that a remarkable proportion of high-class field dogs which have been kept in severe training for several years are more or less impotent. In other words, there seems to be, here again, a diversion of energy and a somewhat one-sided development. The case of the greyhound, Fullerton, is well known. It is not so well known that three or four of the most brilliant field dogs of the last few years are very uncertain in the stud. Nature's care for the perpetuation of a species is so effective that few animals are under any circumstances barren or impotent. These cases of unreliable sires may be only accidental, but my own inference is that the excessive exertion required in high training has a great deal to do with the cited result.

In the case of dams, I have no doubt whatever; because there it is purely a question of extra nutrition, and I practically know, from a hundred instances, that age and severe training are both agents in the absorption of energy by one function and the concurrent loss by another.

CARE OF AN AUTOMOBILE IN WINTER

By HERBERT L. TOWLE

COLD weather affects first and foremost the jacket water; or, if the car be a steamer, the water in the pipes leading to the gauges and pumps. The former, at any cost, and the latter, if possible, must be prevented from freezing. Next to the water, the lubricants are affected, and the car, which ought to run like a breeze, can hardly be pushed out of the barn, and is logy and stiff for miles before it becomes fully warmed up. Then, if one has a gasoline car, the slow rate of evaporation of gasoline at low temperature may make it difficult to start the car, or even to run it when started. And, finally, as the brittleness of all metals is increased by cold, axles, steering knuckles and springs are more likely to snap under sudden shocks in winter than in summer.

By all odds the best preventive of freezing troubles is to use an air-cooled motor. Such motors have not established their superiority in the higher powers; but for light cars, which are to be used all the year around, and especially for northern latitudes, where the chance of trouble with the water-cooled motors is considerable, it may seriously be maintained that nothing else is so satisfactory. There are two or three American makes of air-cooled motors which have won first-class reputations, and a choice should not be difficult.

A freeze in the engine water jacket means a cracked jacket wall, unless this be of copper. When a water-cooled motor is used, that disaster may be averted on the first frosty nights of winter by emptying the cooling system, being careful to let no water remain in pockets, in jacket, piping, or pump, and refilling in the morning. When this becomes too troublesome, a non-freezing solution must be employed. The best material for this purpose is calcium chloride (do not confound this with chloride of lime—bleaching powder—which is very destructive of iron and steel), a good commercial grade of which may be bought for from five to ten cents per pound. This is dissolved in water, the strength of the solution being determined by the temperature to be resisted. It is best tested by a storage battery hydrometer, which should show a density of 1.15 for temperatures above zero, Fahr., or 1.20 for 15 degrees below zero. It is most readily prepared by making a saturated solution, and diluting with from one to two parts of water—rain-water being preferred. Loss by leakage should be made up with fresh solution, and loss by evaporation with pure water. It is well to test the density occasionally, and add water or saturated solution as required. The solution should be renewed once in a while as it becomes foul. A forty per cent. solution of glycerine will freeze at about zero Fahr., but this substance rots rubber tubing and becomes foul sooner than the calcium chloride. If a test with litmus paper shows, by the paper turning red, that either the chloride or the glycerine solution is acid, it may be neutralized with a little lime. The former should never be allowed to approach the boiling point, as at or near 200 degrees F., it liberates free hydrochloric acid, which quickly ruins the radiator and other thin metal parts which it reaches.

When the cylinder oil becomes too cold to feed freely, whether from sight-feed oil cup or force pumps, or to splash in the crankcase, when that method of lubrication is used, it must be thinned with kerosene, or with gasoline if the weather is very cold, and the rate of feed increased to correspond. A lighter lubricant, if of a lower fire test, should on no account be substituted, as it will clog the valves and piston-rings and fail to lubricate. The kerosene, on the contrary, merely burns up, leaving little or no trace. Some operators prefer not to thin the oil fed to the crankcase, as it may become too thin when warmed by the motor's heat, but to feed it by a hand pump, instead of automatically. Dashboard pumps for this purpose have a three-way cock instead of check valves, so that there is no possibility of the oil failing to go where it is wanted. It is worth while, in this connection, to remember that a mechanical oiler may pump the oil that gets to it, and yet fail to suck oil from the tank if the latter and the pipes are cold.

For the gear case and the minor bearings the oil may be thinned as above, or a "cold test" oil may be used. Where grease is employed, a thinner grade must be used in cold weather, or it must be mixed with machine oil. If grease be fed to a bearing by a screw cup and a long pipe, it may get so hard as to burst the pipe when an attempt is made to feed it, unless properly reduced.

Nearly all carburetors have to have a certain amount of heat supplied to them, either by warming the air taken in or by circulating hot water or exhaust gases around the mixing chamber of the carburetor itself: but never try to warm the carburetor by a flame of any sort.

Very many of the small annoyances in starting, in regulating the oil feed, and the like, may be saved, and the comfort with which one may adjust and repair greatly promoted, by housing the machine where the temperature never reaches the freezing point. A steam coil from the house furnace, or a stove in an alcove where stray gasoline vapor will not be likely to reach it, will provide for this, and the professional or business man who expects to use his car regularly through the winter can hardly dispense with such an aid.

DEVELOPING AND DEVELOPERS

[CONTINUED]

By L. W. BROWNELL

FOR many years the most universally-used developer has been one in which the principal ingredient is pyrogallic acid, and this, despite the fact of the large number of developing agents that have of late years been placed upon the market, is still, in the hands of one who knows how to use it properly, the best all-around developer.

Its one fault is its liability to stain, not only the plates, but the fingers of the operator and anything else with which it comes in contact, and these stains are impossible to remove. With careful manipulation, however, the marks need not appear on the negative for they are caused by too strong or too warm developer, or by prolonged forcing of the development.

Right here it is well to say that a plate that has been under-exposed can never be remedied by forcing the development. The developer will bring out what there is in the negative, but beyond this it cannot go, and the only result of trying to force out more detail by prolonging the development will be either a stained or a chemically-fogged plate, or both.

In the hands of one accustomed to its use, pyro can be made to produce any quality of negative desired, and it is not difficult to acquire this necessary knowledge, but it must be by practice.

The following is an excellent formula: Solution B, sulphite of soda, 1 oz. Use 1 1-2 oz.; bromide of ammonia, 30 grains; citric acid, 1 dram; pyrogallic acid, 1 oz. Solution B, sulphite of soda, 1 oz.; carbonate of potash, 3 oz.; water, 10 oz. Use 1 dram of each solution to 2 oz. of water. It is well never to use this developer for more than two or three plates, as it weakens and discolors from repeated use and is more liable to stain. It is cheaper, in the end, to throw it away as soon as it commences to work slowly, and mix fresh, but the two stock solutions, if kept well corked, will last indefinitely.

Of all the many developers, most of which are products of coal tar, that have been placed upon the market in the past few years, metol is undoubtedly the best. It gives a soft negative, full of fine detail and delicate half tones. Is a developer that is easy to work and rapid in its action. In fact, its rapidity of action is one of its chief faults, as it gives less time for careful following of the development.

For portrait work it is, in my opinion, unexcelled, and the following formula I have found to give most excellent results: Water, 10 oz.; metol, 75 grains; sulphite of soda (crystals), 1 oz.; carbonate of soda (crystals), 1 oz. Use one part of this solution to three of water and add, if necessary, a few drops of a ten-per-cent. solution of bromide of potassium.

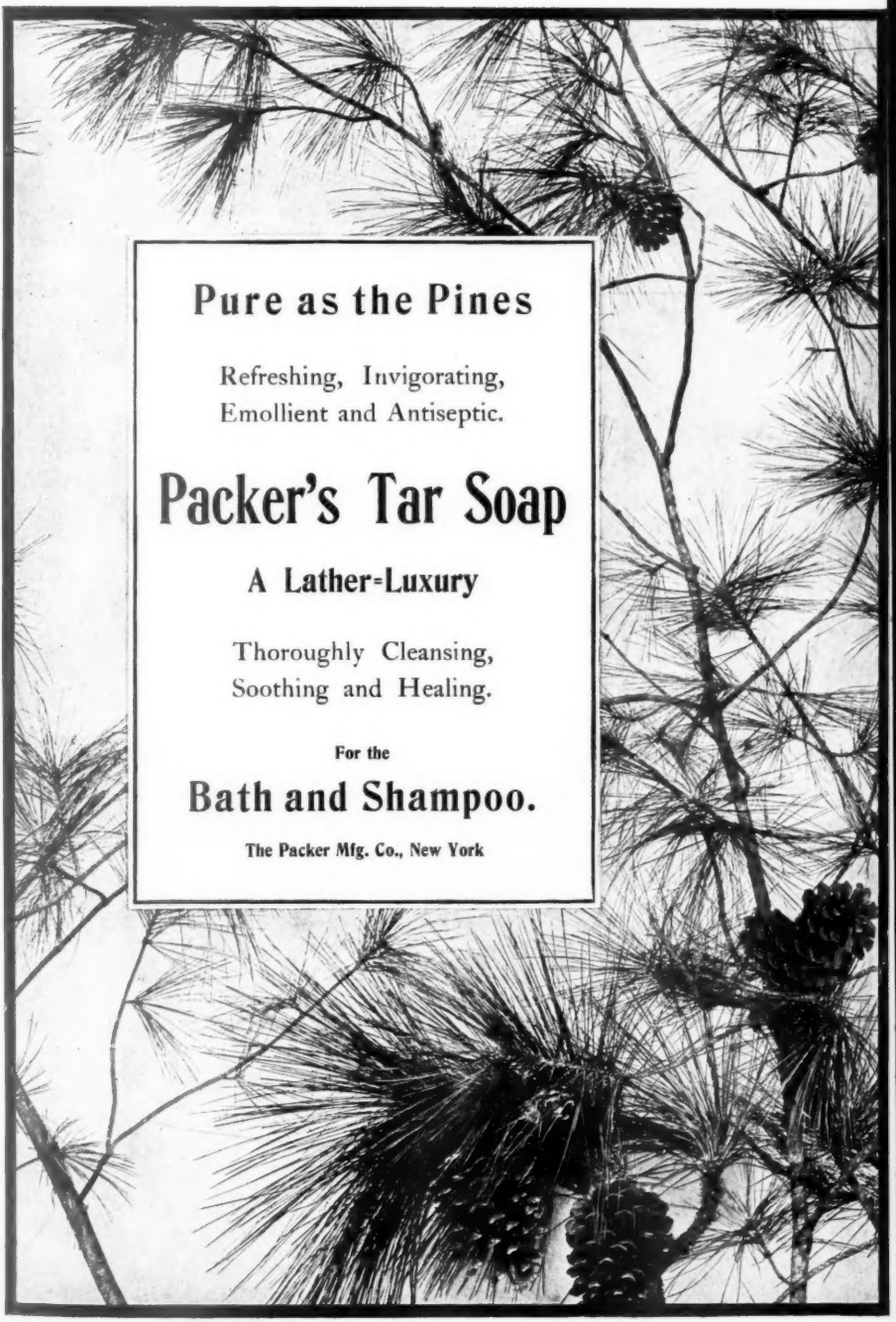
For landscapes and general photography, in which sharpness of detail and brilliancy is desired, the following formula will probably be found better than the above: Water, 25 oz.; metol, 60 grains; hydrokinone, 60 grains; sulphite of soda, 2 oz.; carbonate of soda, 1-2 oz. Use one part of this solution to from two to four of water, according to whether you wish for a weak or a strong negative.

Any of the foregoing formulas can be used for tank development, but must be diluted with from twenty to thirty times the amount of water ordinarily used. For those who are sure of the exposures they have given their negatives, I should always advise this method of development as giving the most uniform and even results in the least possible time, that is, of course, when there are a number of negatives to be developed.

When starting to develop a number of negatives when we are uncertain whether they have been correctly exposed, it is always the best plan to have two graduates of developer mixed, one ordinary strength and the other about one-third strength, that is with three times the amount of water.

Start development with the weaker solution and watch carefully how the image appears. If it comes up quickly and with a flat, hazy appearance, then the plate has been over-exposed, and the weak developer must be poured off and the stronger one used, with the addition of fifteen or twenty drops of the bromide solution. Development under these conditions should be carried beyond the point where it would ordinarily be stopped in order to bring out all the details, and the negative reduced afterward if too dense. On the other hand, if the image comes up very slowly and in spots, it has been under-exposed and then the developer must be weakened still more by adding an ounce or two more of water and no bromide. By this means all the detail that is in the negative can be brought out and it can be strengthened afterwards by intensification. If the image seems to be coming up exactly as it should, and it should appear in from one-half to one minute (one soon learns to tell as quickly as the image appears whether or not it has been correctly exposed), then the weak developer can be poured off and the ordinary strength used, with the addition of no bromide, until the desired density is reached.

A negative should be thin enough to enable one to read print through any part of it, and it should print on silver paper in about five or six minutes in the sunlight. Negatives should always be well fixed and washed thoroughly, or else they will stain in time. They should be left in the fixing bath for at least several minutes after they have been, apparently, perfectly fixed, and should be washed in running water at least three-quarters of an hour.

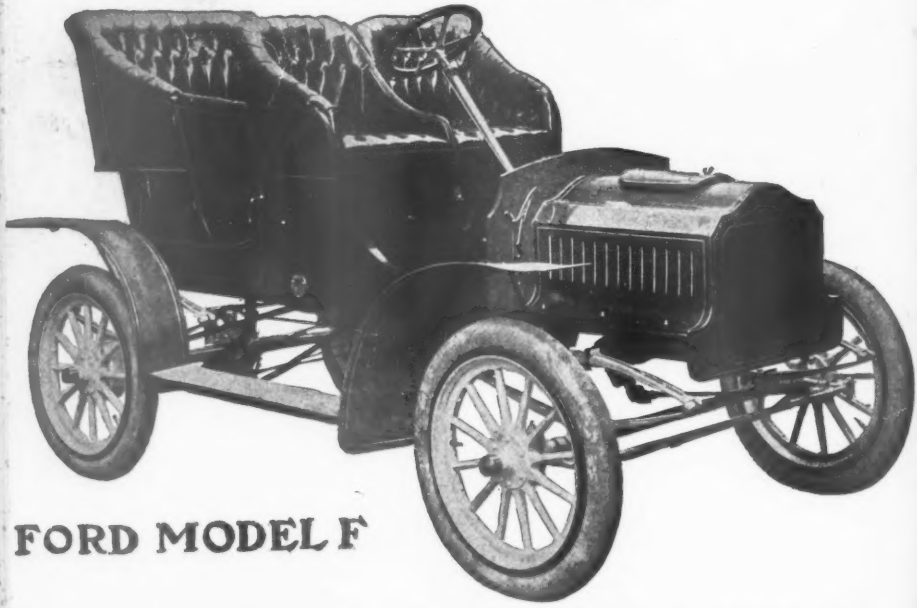

Pure as the Pines
Refreshing, Invigorating,
Emollient and Antiseptic.
Packer's Tar Soap
A Lather-Luxury
Thoroughly Cleansing,
Soothing and Healing.
For the
Bath and Shampoo.
The Packer Mfg. Co., New York

DON'T EXPERIMENT

JUST BUY

A

FORD



FORD MODEL F

WRITE FOR CATALOGUE

FORD MOTOR CO., DETROIT, MICH.